Polycom® KIRK® Wireless Server 6000

Installation and Configuration Guide

14168000 Version 2

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1

Preface

This guide is intended for qualified technicians who will install, configure and maintain the KIRK Wireless Server 6000 (KWS6000) Solution. To qualify to install the KWS6000 Solution, you must have successfully completed the KWS6000 technical training. The guide provides all the necessary information for successful installation and maintenance of the wireless solutions.

This includes the installation and configuration of:

- KIRK Wireless Server 6000
- KIRK Media Resource
- KIRK Codec Module
- KIRK Base Station
- KIRK Repeater
- KIRK Handset

The Installation Guide also provides you with information about:

- Web based Administration Page of the KWS6000, media resource and base station

Important Information Before You Begin

This guide assumes the following:

- that users have a working knowledge of the call handlers operations
- that the call handler is installed and initialized and is working correctly
- that you have a working knowledge of deployment in general
- that a site survey has been conducted and that the installer has access to these plans

Note The site survey should determine the number of handsets and how many RF channels are needed.

Chapter Overview

Where is it?	What is it about?	When to use it?
Chapter 2	Introduction to KIRK Wireless Server 6000	To learn about the different components in a typical KWS6000 configuration.
Chapter 3	Deploying the KIRK Wireless Server 6000	To learn how to deploy a KWS6000 Multi-cell installation.
Chapter 4	Installing KIRK Wireless Server 6000 and KIRK Media Resource	To learn about KWS6000/KIRK Media Resource and to install it.
Chapter 5	Installing KIRK Codec Module	To learn about the KIRK Codec Module and to install it in a KIRK Media Resource.
Chapter 6	Installing KIRK Base Station	To learn about the KIRK Base Station and to mount it onto wall indoors.
Chapter 7	Installing KIRK Repeater	To learn about the KIRK Repeater and to mount repeater onto wall or ceiling indoors.
Chapter 8	Preparing KIRK Handset for Use	To prepare KIRK Handsets for use, installing and charging battery.
Chapter 9	Basic Network Configuration	To learn about DHCP and TCP/IP Setup and to assign options to DHCP server.
Chapter 10	Configuring KIRK Wireless Server 6000	To power up the KWS6000, connect a computer to the KWS6000, access the web based Administration Page and configure the KWS6000 using DHCP or TCP/IP Setup.
Chapter 11	Configuring KIRK Media Resource	To power up the KIRK Media Resource, connect a computer to the KIRK Media Resource, access the web based Administration Page and configure the KIRK Media Resource using DHCP or TCP/IP Setup.

Where is it?	What is it about?	When to use it?
Chapter 12	Configuring KIRK Base Station	To power up the KIRK Base Station, connect a computer to the KIRK Base Station, access the web based Administration Page and configure the KIRK Base Station using DHCP or TCP/IP Setup.
Chapter 13	KIRK Handset Registration and Subscription	To register and subscribe KIRK Handsets.
Chapter 14	KIRK Handset Management	To unsubscribe and deregister KIRK Handsets. To change user configuration and adjust handsets.
Chapter 15	System Management	To define and view different settings of the system, reading statistics, making a backup of configuration file, updating system software, and resetting the system.
Chapter 16	Messaging over MSF	To enable the MSF messages function.
Chapter 17	Regulatory Notices	To learn about safety regulation for the KWS6000.
Chapter 18	Open Source Software Notice	To provide information about the Open Source Software.

Related Documentation

For further information about the KWS6000 not covered by this manual, refer to the following documentation:

Subject	Documentation
Deployment Kit	Deployment Guide
Handset Operation	Handset User's Guide
Release Notes	Every software release is accompanied by a release note. The release note describes software changes, bug fixes, outstanding issues, and hardware compability considerations for the new software release. Read the release note before you begin a software upgrade! To obtain the release note, see www.polycom.com

Acronyms

AC	Authentication Code
ARI no.	Access Rights Identity - Serial number of the KWS6000
dB	Decibels (deciBells)
DECT	Digital Enhanced Cordless Telecommunications
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
e.i.r.p.	Equivalent Isotropic Radiated Power
GAP	Generic Access Profile
HW PCS	Hardware Product Change Status - Hardware edition
IP	Internet Protocol
IPEI	International Portable Equipment Identity - Serial number of the handset - SN
KWS	KIRK Wireless Server
LAN	Local Area Network
LED	Light Emitting Diode
MAC	Media Access Control - hardware address of a device connected to a network
MTU	Maximum Transmission Unit
MWI	Message Waiting Indication
NIC	Network Interface Card
NTP	Network Time Protocol
PBX	Private Branch eXchange
PCS	Product Change Status (Edition)
PoE	Power over Ethernet
PP	Portable Parts - wireless handset
RSSI	Received Signal Strength Indicator
RTP	Real-time Transport Protocol
SIP	Session Initiated Protocol
SW PCS	Software Product Change Status - Software edition
TFTP	Trivial File Transfer Protocol
UDP	User Datagram Protocol

VoIP	Voice over Internet Protocol
WLAN	Wireless Local Area Network
WRFP	Wireless Radio Fixed Part - Wireless Repeater

2

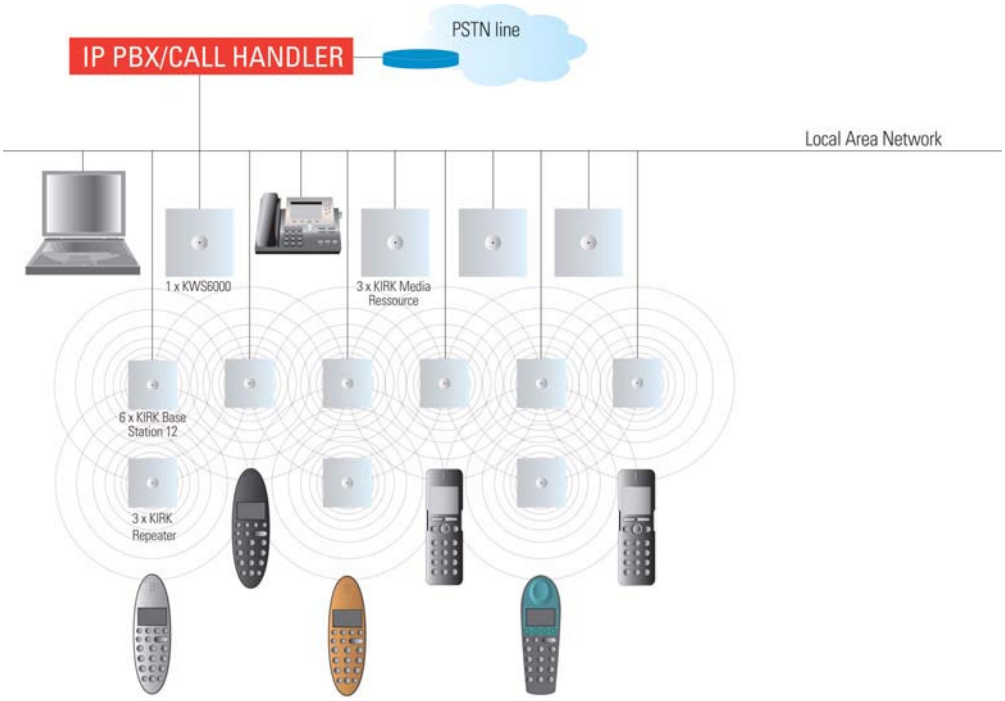
Introduction to KIRK Wireless Server 6000

This section provides a description of the KWS6000 solution.

A typical KWS6000 configuration includes a number of the following components, in addition to the KWS6000:

- Media resources
- Base stations
- Repeaters
- Handsets and accessories

Figure 2-1 *Overview of the Whole Solution*



This section provides information about:

- "Components of the KIRK Wireless Server 6000 Solution" on page 2-2
- "Requirements for the KIRK Wireless Server 6000 Solution" on page 2-7
- "Installation Prerequisites" on page 2-11

Components of the KIRK Wireless Server 6000 Solution

This section provides information about:

- "KIRK Wireless Server 6000" on page 2-2
- "Wireless Bands" on page 2-3
- "KIRK Media Resource" on page 2-3
- "KIRK Base Station" on page 2-4
- "KIRK Repeater" on page 2-5
- "KIRK Handset" on page 2-6
- "KIRK Maintenance Software" on page 2-7
- "Administrative Computer" on page 2-7

KIRK Wireless Server 6000

Below you will find an overview of the system capacity of the KWS6000.

Table 2-1 *Overview of System Capacity*

Description	Capacity
Max. number of base stations. **Note:** A minimum of 1 base station is required, as the KWS6000 does not have a built-in radio.	256
Max. number of simultaneous calls on each base station	11
Max. number of repeaters on each base station	3
Max. number of simultaneous calls on a KWS6000/media resource (G.711)	32
Max. number of media resources	32
Max. number of simultaneous calls with 32 media resources	1024

Table 2-1 Overview of System Capacity

Description	Capacity
Max. number of simultaneous calls on each KWS6000/media resource with Codec Module	24
Max. number of simultaneous calls with 32 media resources with Codec Module. **Note:** If the Codec Module is used, it is recommended to install it in al media resources.	768
Max. number of registered handsets	4096

The KWS6000 controls the wireless infrastructure. It manages media resources, base stations, repeaters and the IP interface to the call handler.

The communication protocol between the KWS6000 and the call handler is SIP

A KWS6000 is installed directly on the LAN and must be managed as part of the corporate network.

For more information about the KWS6000, refer to "Deploying KIRK Wireless Server 6000" on page 3-1, "Installing KIRK Wireless Server 6000 and KIRK Media Resource" on page 4-1 and "Configuring KIRK Wireless Server 6000" on page 10-1.

Wireless Bands

The wireless solution supports two wireless bands, allowing operation in various countries and regions. Supported wireless bands are:

- ETSI DECT (1880-1900 Mhz), referred to as DECT
- USA DECT (1920-1930 Mhz), referred to as 1G9

The wireless band used by a KWS6000 solution is determined by the base stations and handsets ordered with the solution.

KIRK Media Resource

The media resource performs media conversion between the call handler and the KWS6000 and is the media termination point for incoming and outgoing calls.

A maximum of 32 media resources can be added to a KWS6000. Each media resource adds 32 voice channels to the system. Adding 32 media resources makes it possible to have 1024 calls at the same time.

Note The KWS6000 contains one media resource.

Codec Module

It is possible to install a Codec Module in the media resource. The Codec Module adds a number of codecs, allowing the wireless server to interface to G.729A.

Note

When installing a Codec Module, the media resource only adds 24 voice channels to the system. Adding 32 media resources with codec modules makes it possible to have 768 calls at the same time.

For more information about media resources, refer to "Installing KIRK Wireless Server 6000 and KIRK Media Resource" on page 4-1 and "Configuring KIRK Media Resources" on page 11-1.

For more information about installing the Codec Module, refer to "Installing KIRK Codec Module" on page 5-1.

KIRK Base Station

The base stations are positioned in the area to send and receive calls between the wireless server and the handset. The base station contains internal antennas and handles 11 speech channels simultaneously. A base station is able to synchronize with other base stations. When the base station is synchronized with other base stations, a person speaking in a handset can move between base stations without any interference.

Transmission length is up to 100 meters/329 feet according to IEEE 802.3u on a twisted pair cable, e.g. cat.5e. The base station is a class 1 PoE device (802.3af) and must be powered accordingly (maximum power supply consumption 3.0W according to PoE 802.3af). The radius coverage of the base station is up to 90 meters/295 feet indoor and up to 300 meters/984 feet outdoor, with a handset in line-of-sight.

Coverage area decreases depending on choice of building materials and obstructive elements. To ensure proper coverage in the areas required, it is necessary to conduct a site survey and deployment by certified technicians. For more information about deployment, refer to the Deployment Guide accompanying the Deployment Kit.

For more information about the base station, refer to "Installing KIRK Base Station" on page 6-1 and "Configuring KIRK Base Station" on page 12-1.

KIRK Repeater

The repeater can be used to extend the coverage area in a wireless solution. Depending on the repeater type, it can be mounted either on the wall or on the ceiling. The wireless repeater is used in areas with limited voice traffic, where cabling is difficult. The repeater does not increase the number of traffic channels, but increases the coverage area established with the base station. Up to three repeaters can be placed in cascade formation directing coverage in a certain direction.

The base station can support up to 3 repeaters.

For more information about the repeater, refer to "Installing KIRK Repeater" on page 6-1.

KIRK Handset

The handset is a lightweight, ergonomically designed wireless unit that includes an LCD display and keypad.

The handset is a portable unit compatible with DECT GAP standard.

The handset is designed to provide the subscriber with most of the features available for a wired phone, in addition to its roaming and handover capabilities.

The KWS6000 supports up to 4096 registered handsets.

For more information about the handset, refer to "Preparing KIRK Handset for Use" on page 8-1, "KIRK Handset Registration and Subscription" on page 13-1 and "KIRK Handset Management" on page 14-1.

Auto Login and Handover

Auto login refers to the ability to log on to more than one system, enabling you to use the same handset on up to 10 different systems. If a handset is subscribed to two or more systems, you can use Auto Login type A or Auto Login type B to change between the systems automatically:

- Auto Login type A is used if a handset is subscribed to two or more systems. Auto Login A should only be used in separate systems without overlaps.
- Auto Login type B is used if a handset is subscribed to two systems only. Auto Login B can be used in separate systems which are overlapping each other.

Note Auto Login type B is only supported in 4020/4040/4080 Handsets.

For more information about Auto Login, refer to "Subscribing KIRK Handsets" on page 13-3.

Handover refers to the ability to move between the coverage areas of different radio units on the same system while talking, without interruptions in the conversation.

KIRK SIO Application Interface

The SIO Application Interface is a communication platform allowing text messaging between the wireless server and a handset. With the SIO API, which is a fundamental part of all our solutions, and a third party application program, the customer is offered a wide range of usage opportunities in a variety of vertical markets.

KIRK Maintenance Software

The following software application for the installation and maintenance of the KWS6000 Solution is provided:

- ServiceTool

  Used for programming of the repeater, adjustment of the handset and software download to repeater/handset.

Note ServiceTool is not used for adjustment of the 5020 Handset.

The ServiceTool application can be downloaded from www.polycom.com.

Administrative Computer

An administrative computer is required for configuration and maintenance of the KWS6000, media resource and base station. This computer may be temporarily connected directly to the device or to the network. A dedicated computer is not required.

Requirements for the KIRK Wireless Server 6000 Solution

This section provides information about the environmental and electrical requirements and software requirements for the KWS6000 solution.

KIRK Wireless Server 6000/KIRK Media Resources

Environmental Requirements

The installation area must:

- be clean, free of traffic and excess dust, dry, and well ventilated
- be within the temperature ranges of 10°C and 40°C/50°F and 104°F
- be between 20% and 80% non-condensing relative humidity

Note The installation area must be of sufficient height from the floor to prevent water damage.

Electrical Requirements

The following electrical requirements must be met:

- Power consumption: 8V/500 mA
- Typical power consumption: 5W per unit
- The supplied power for the AC adaptor power supply must be 110 to 240 ac nominal, 50/60 Hz.

KIRK Base Stations and KIRK Repeaters

Environmental Requirements

- Avoid installing base stations and repeaters on large concrete or marble columns because these columns affect radio coverage. If possible, place the base station a minimum of one meter/3.3 feet from these types of columns.
- Do not install a base station or repeater with the antenna housings near metal objects. Be careful not to damage existing wiring or panels.
- Do not position base stations and repeaters in ducts, plenums, or hollow spaces used to transport environmental air except where the duct, plenum or hollow space is created by a suspended ceiling having lay-in panels. When you need more than one base station in a cell to meet traffic requirements, position the base stations at the same cell center.
- Keep the base station and repeater away from steel constructions.
- Do not position base stations and repeaters directly on metallic surfaces. If possible, place the base station a minimum of one meter/3.3 feet from these types of surfaces.
- Do not position base station and repeaters behind furniture.
- Only position base stations and repeaters where the signal is needed.
- The installation area must be clean, free of traffic and excess dust, dry, and well ventilated.
- The installation area must be within the temperature ranges of 10°C and 40°C/50°F and 104°F.
- The installation area must be between 20% and 80% non-condensing relative humidity.

- Minimum distance between two base stations varies depending on material and construction of buildings, but there must always be synchronization chains and radio coverage overlap between the two base stations or handover between radio units. The time it takes a person to cross the common coverage area must be 10 seconds or more, as the handset needs time to scan for an alternative base station.

Electrical Requirements for Base Station

The following electrical requirements must be met:

- The base station operates on standard twisted pair ethernet cable - e.g. minimum Cat.5e - to prevent disturbances from other equipment.
- Maximum power supply consumption is 3.0W (IEEE 802.3af class 1 device).
- The max. radiated output power for the antenna is 10mW e.i.r.p/channel.

Electrical Requirements for Repeater

- The supplied power (power supply) for the charger must be 110 V to 120 V ac nominal (or 220 V to 230 V ac nominal), 50/60 Hz.

KIRK Handsets

Environmental Requirements

- The area where the handset is used must be within the temperature ranges of 0°C and 40°C/32°F and 104°F.
- For correct battery charging, the room temperature must be between 0°C and 25°C/32°F and 77°F. Therefore, the handset must not be placed in direct sunlight. The battery has a built-in heat sensor which will stop charging if the battery temperature is too high.
- For battery information, refer to "Installing Battery" on page 8-4.
- The area where the handset is used must be between 20% and 80% non-condensing relative humidity.

Electrical Requirements

The following electrical requirement must be met:

- The supplied power (power supply) for the charger must be 110 V to 120 V ac nominal (or 220 V to 230 V ac nominal), 50/60 Hz.

KIRK Maintenance Software

This section describes the computer requirements to run the installation and maintenance tools of the handset and repeater.

Software Requirements

- OS: Windows 2000 (SP4), Windows XP (SP2), Windows Vista
- CPU: Minimum 400MHz (2000/XP), 1GHz (Vista)
- RAM: Minimum 256 MB (2000/XP), 1 GB (Vista)
- GPU/Display: XGA (1024x768)
- Harddisk: Minimum recommended harddisk size by OS and other installed applications + 25 MB free space for the application.

Note Depending on other applications running on the system, CPU, RAM and harddisk may vary.

Installation Prerequisites

Note

Ensure that a site survey and deployment have been conducted and that the installer has access to these plans before proceeding any further. For more information about deployment, refer to "Deploying KIRK Wireless Server 6000" on page 3-1.

Before you start the installation you need to find the following information and perform the following tasks:

- ARI codes (serial numbers) for the KWS6000 (see label on the rear of the KWS unit)
- Serial numbers for handsets. Refer to "Retrieving the Serial Number of the KIRK Handset" on page 8-12.
- AC codes (authentication codes)

  The AC is a customer-defined optional subscription pin code of a maximum of eight digits for the individual handset. The AC can be used when connecting the handset to the KWS.
- Repeaters:

  Mark each repeater with the number of the related base station. This way you can easily configure the system on site.
- Handsets:

  To use the handsets, you must first install the radio infrastructure, e.g. base stations and repeaters to transmit and receive radio signals to and from the handsets. There are no direct connections between the handset and the system. For more information about base station and repeater installation, refer to "Installing KIRK Base Station" on page 6-1 and "Installing KIRK Repeater" on page 6-1.
- Charging battery

  When charging the handset battery for the first time, leave the handset in the charger for 14 - 16 hours to ensure that the battery is fully charged and the handset ready for use. Refer to "Charging KIRK Handsets" on page 8-7.

3

Deploying KIRK Wireless Server 6000

Before you install the KWS6000 solution, it is necessary to perform a complete site survey and determine the exact location of KWS6000, base stations, repeaters and number of handsets required.

A well planned installation should start with an RF coverage site survey. A site survey is designed to determine the optimal location for base stations and repeaters and the amount of wireless voice traffic to be supported by the installation (i.e., how many handsets must maintain voice conversations at the same time, in any given area).

Due to the unexpected nature of RF propagation in an indoor environment, an actual on-site test must be performed before the installation is complete. While an extensive guide to effective RF coverage planning is outside the scope of this manual, the following points should be taken into consideration when planning the site, prior to base station and repeater installation:

- The base station/repeater provides typical RF coverage of up to 50 meters/164 feet in a typical indoor office environment and up 300 meters/984 feet in an open area (line-of-sight), extending in all directions from the base station/repeater. The exact coverage range depends on the building architecture, wall material and surroundings.
- The wireless solution can support a maximum of 4096 handsets.
- The wireless solution supports a maximum of 256 base stations.
- Handset handover: handsets can move between coverage areas of base stations and repeaters while receiving continuous service and maintaining conversations in progress.
- For efficient handover of conversations between base stations, deploy base stations with wide **overlap** between them (i.e., plan for some areas to be covered by more than one base station). Overlaps are necessary to maintain seamless handover and to establish synchronization chains. A good example may be a cafeteria during lunch hour where temporary

concentrations of handsets may occur. The overlap carries the excess call load to adjacent base station to provide uninterrupted services to subscribers.

- Typically, installations such as office buildings, hotels and hospitals should be equipped with base stations/repeaters on several floors to create uniform and complete RF coverage.
- Open areas can be covered with a sparse network of base stations. In such applications, the base stations/repeaters cover an extended range due to the extended line-of-sight RF propagation capability.
- Ensure that there is not a residential DECT system (home DECT) on the site.

This section provides information about:

- "Recommendations for KIRK Base Station/KIRK Repeater Placement" on page 3-2
- "Deployment of a KIRK Wireless Server 6000 Multi-Cell" on page 3-3

Recommendations for KIRK Base Station/KIRK Repeater Placement

- In large halls, the base station/repeater (wall) should be installed vertically in the middle of the space below the drop ceiling.
- In corridors, the base station/repeater (wall) should be installed vertically preferably at corridor intersections where propagation patterns follow the corridor patterns. The base station/repeater should point towards the corridor and preferably in the middle height between the floor and the actual ceiling. In case there are high objects in the area, the base station/repeater (wall) should be installed above those objects but still kept distant from the ceiling.
- The repeater (ceiling) should be installed in the middle of corridors and small rooms.
- In multi-story buildings, base stations/repeaters may be installed on opposite sides of the floors to take advantage of the floor-to-floor coverage. The coverage design cannot rely entirely on floor-to-floor propagation; each case must be verified due to variations in local attenuation patterns.
- If the building contains a central open space area with windows to the other areas, base stations/repeaters may be installed in this open space to provide a good coverage for the rooms in the inner circle on all floors (e.g. hotels).

- If a base station/repeater (wall) hangs vertically on a wall, the RF coverage in front of the base stations/repeaters is twice as large as the coverage at the rear. When a base station/repeater is installed on the outside of an outer wall, the RF coverage behind it is strongly attenuated by the wall.
- Base stations/repeaters should not be installed near large metallic objects.
- Reinforced concrete structures have a high attenuation factor inside the building. They decrease the RF coverage range of the base stations/repeaters and therefore requires a higher number of base stations/repeaters in the building. Lighter types of construction require fewer base stations since attenuation figures are considerably lower.

Deployment of a KIRK Wireless Server 6000 Multi-Cell

Note This section only contains deployment information specific to the KWS6000. For more information about deployment in general, refer to the Deployment Guide accompanying the Deployment Kit. The Deployment Guide provides instructions on how to use the Deployment Kit to determine the most suitable locations for the different radio units.

Sync over Air

As a user moves from one base station radio coverage area to another, the call must be handed over to the next radio unit. To create handover between radio units it is necessary to establish synchronization chains. For more information about synchronization chains, refer to "Examples of Synchronization Chains" on page 3-4. If the synchronization between radio units is lost, then handover is not possible and ongoing calls will be terminated.

Note Each base station must be placed within the radio coverage area of at least one other base station or repeater (radio units).

Examples of Synchronization Chains

Certain rules must be taken into consideration when establishing synchronazation chains:

- The distance over which synchronization can take place is limited to a distance similar to a loss of max. 25 dB. If the loss of signal is higher than 25 dB, there is no guarantee that synchronization is stable.

Note It is recommended that a base station synchronizes with at least two other radio units, that an alternative sync way is defined to ensure system redundancy. If the primary sync way is not working, then the alternative sync way takes over and the synchronization chain is not broken.

Note Synchronization chains for the KWS6000 Solution can be made with base stations and repeaters.

Note As you can only configure a repeater to synchronize on one radio ID, it is not possible to define alternative sync ways for repeaters.

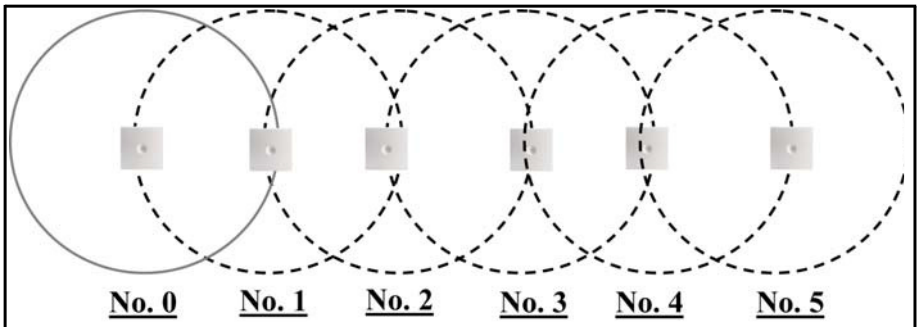
As the KWS6000 uses the DECT interface to synchronize on, one base station is configured as the Sync Master.

This section provides information about:

- "Sync Chain With One Sync Master (Primary Sync Ways)" on page 3-5
- "Sync Chain With Alternative Sync Ways" on page 3-6
- "Sync Chain With and Without Alternative Sync Ways" on page 3-9

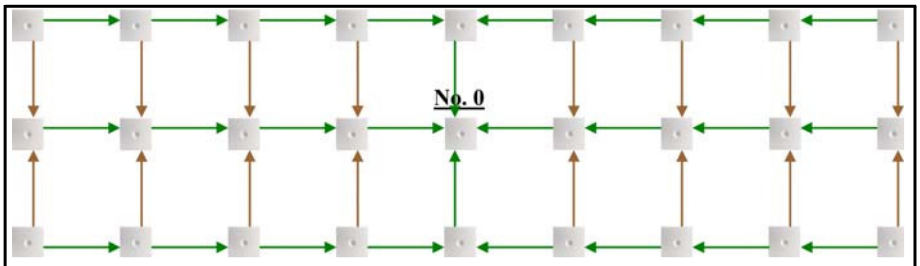
Sync Chain With One Sync Master (Primary Sync Ways)

Figure 3-1 *Synchronization Chain*



- The synchronization chain must always overlap with the base station to sync on.
- **No.0** is the Sync Master (can be numbered 0-255).
- Other radio units are connected to the Sync Master through the synchronization chain.
- If one of the radio units in the synchronization chain is not working, then the synchronization chain is broken and the system will be unstable.

Figure 3-2 *Synchronization Chain Layout without Alternative Sync Ways*



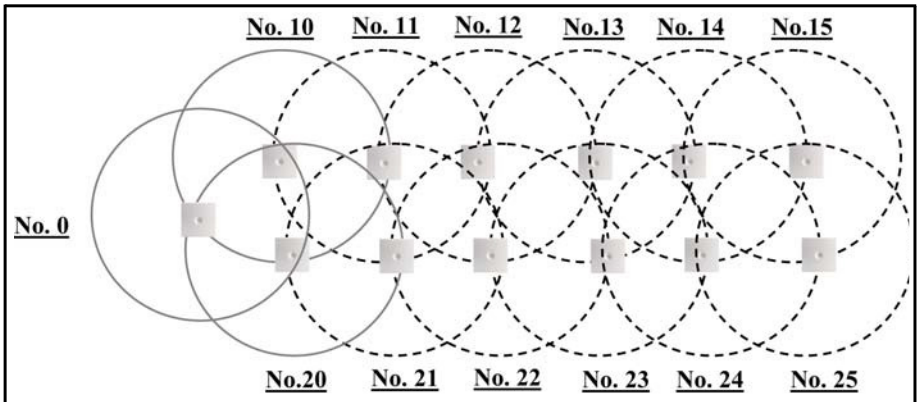
- **No. 0** is the Sync Master (can be numbered 0-255).

  Note: It is recommended to place the Sync Master in the middle of the building.
- Green line: Shows the primary sync ways.
- Brown line: Only handover overlap is needed.

  Note: It is recommended to make a site planner. Every base station must be numbered with **Radio ID**, **Primary sync Radio ID**, and **Alternative sync Radio ID**.

Sync Chain With Alternative Sync Ways

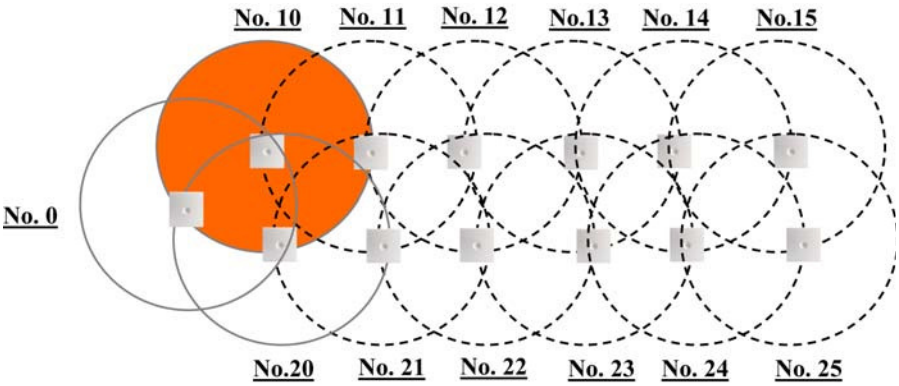
Figure 3-3 *Synchronization Chain with Alternative Sync Ways*



- **No. 0** is the Sync Master (can be numbered 0-255).
- **No. 10** and **No. 20**: Primary and alternative sync on **No. 0**.
- **No. 11**: Primary sync on **No. 10** and alternative sync on **No. 21**.
- **No. 21**: Primary sync on **No. 20** and alternative sync on **No. 11**.

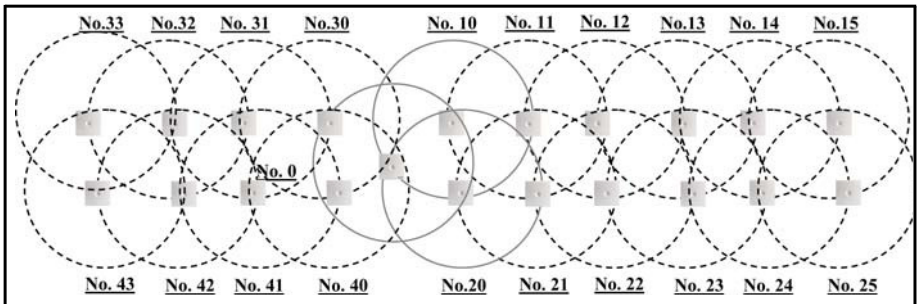
In the example below, base station **No. 10** is down. As a consequence, base station **No. 11** must use the alternative sync way on **No. 21**.

Figure 3-4 *Synchronization Chain with Alternative Sync Ways*



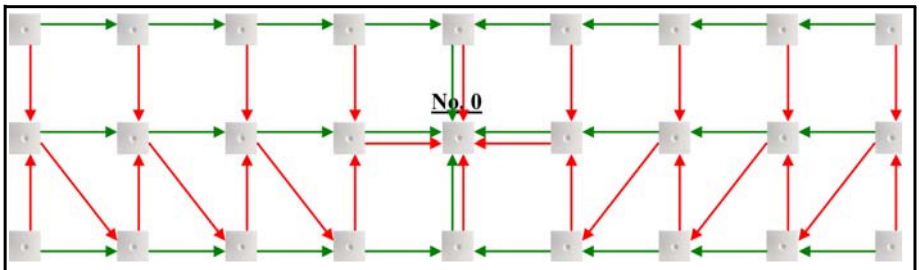
- **No. 0** is the Sync Master (can be numbered 0-255).
- **No. 10** and **No. 20**: Primary and alternative sync on **No. 0**.
- **No. 11**: Primary sync on **No. 10** and alternative sync on **No. 21**.
- **No. 21**: Primary sync on **No. 20** and alternative sync on **No. 11**.

Figure 3-5 *Synchronization Chain with Alternative Sync Ways*



- **No. 0** is the Sync Master (can be numbered 0-255).
- **No. 10**, **No. 20**, **No. 30**, and **No. 40**: Primary and alternative sync on **No. 0**.
- **No. 11**: Primary sync on **No. 10** and alternative sync on **No. 21**.
- **No. 21**: Primary sync on **No. 20** and alternative sync on **No. 11**.
- **No. 31**: Primary sync on **No. 30** and alternative sync on **No. 41**.
- **No. 41**: Primary sync on **No. 40** and alternative sync on **No. 31**.

Figure 3-6 *Synchronization Chain Layout with Alternative Sync Ways*



- **No. 0** is the Sync Master (can be numbered 0-255).

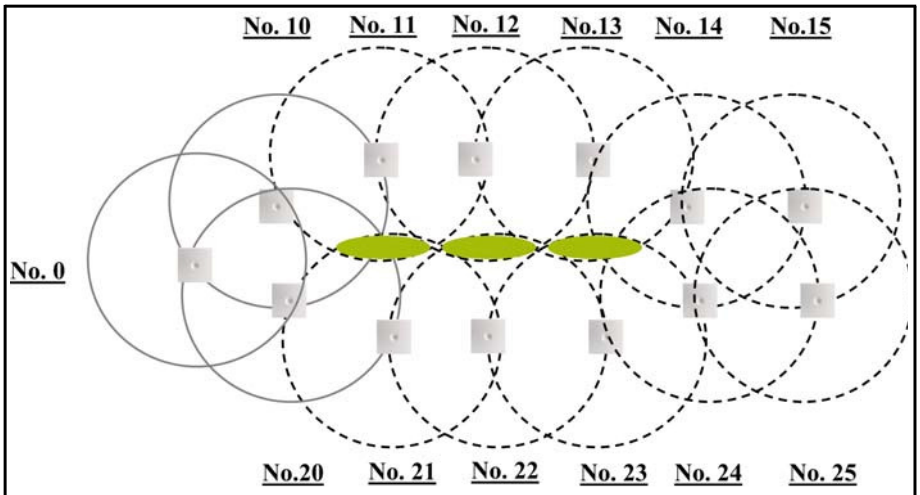
  Note: It is recommended to place the Sync Master in the middle of the building.

- Green line: Shows the primary sync ways.
- Red line: Shows the alternative sync ways.

  Note: It is recommended to make a site planner. Every base station must be numbered with **Radio ID**, **Primary sync Radio ID**, and **Alternative sync Radio ID**.

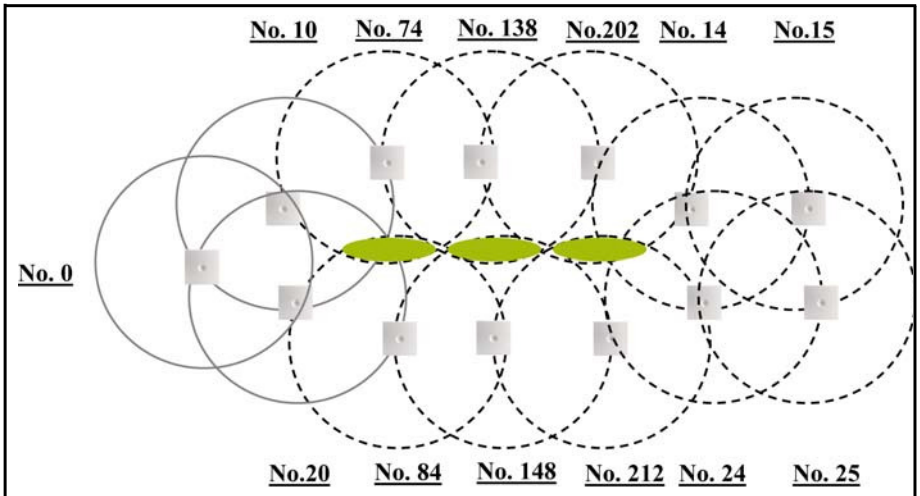
Sync Chain With and Without Alternative Sync Ways

Figure 3-7 Synchronization Chain With and Without Alternative Sync Ways



- **No. 0** is the Sync Master (can be numbered 0-255).
- **No. 10** and **No. 20**: Primary and alternative sync on **No. 0**.
- **No. 11**, **No. 12** and **No. 13**: Only primary sync.
- **No. 14** and **No. 15**: Primary sync and alternative sync.
- **No. 21**, **No. 22** and **No. 23**: Only primary sync.
- **No. 11** and **No. 21**: Only handover overlap (Marked with green).

Figure 3-8 *Synchronization Chain With Repeaters*



- **No. 0** is the Sync Master (can be numbered 0-255).
- **No. 10** and **No. 20**: Primary and alternative sync on **No. 0**.
- **No. 74**, **No. 138** and **No. 202**: Repeater - no alternative sync possible.
- **No. 14** and **No. 15**: Primary sync and alternative sync on repeater.
- **No. 84**, **No. 148** and **No. 212**: Repeater - no alternative sync possible.
- **No. 24** and **No. 25**: Primary sync and alternative sync.
- **No. 74** and **No. 84**: Only handover overlap (Marked with green).

4

Installing KIRK Wireless Server 6000 and KIRK Media Resource

This section provides a description of the KWS6000 and media resource. The section also provides information about resetting the KWS6000 hardware using the Reset button on the KWS6000/media resource faceplate.

Note The installation of a media resource is optional. Installation of a media resource will augment the number of simultaneous voice calls supported by a stand-alone server.

Before you install the equipment, ensure that a site planner defines the locations of the KWS6000 and media resources.

This section contains the following information:

- "Description of KWS6000/KIRK Media Resource" on page 4-2
- "Installing the KWS6000/KIRK Media Resource" on page 4-7

Description of KWS6000/KIRK Media Resource

This section contains information about:

- "KWS6000 Types and Part Numbers" on page 4-2
- "KWS6000/KIRK Media Resource Appearance and Components" on page 4-3
- "KWS6000/KIRK Media Resource LED Indicators" on page 4-5
- "KWS6000/KIRK Media Resource - Reset Button" on page 4-6

Types and Part Numbers

KWS6000 Types and Part Numbers

The table below includes a list of available KWS6000 and their part numbers.

Table 4-1 KIRK Wireless Server 6000 Part Numbers

Variants of KIRK Wireless Server 6000	Part Number
KIRK Wireless Server 6000	0234 4100

KIRK Media Resource Types and Part Numbers

The table below includes a list of available media resources and their part numbers.

Table 4-2 KIRK Media Resource Part Numbers

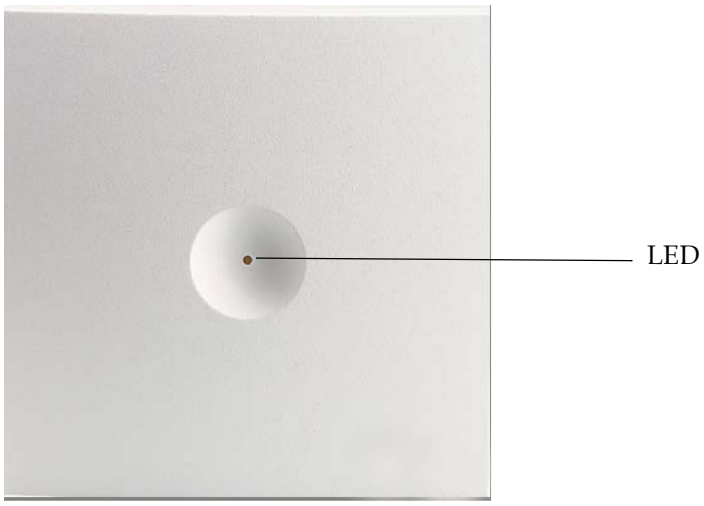
Variants of KIRK Media Resources	Part Number
KIRK Media Resource	0234 4200

KWS6000/KIRK Media Resource Appearance and Components

The KWS6000/media resource front cover includes the following:

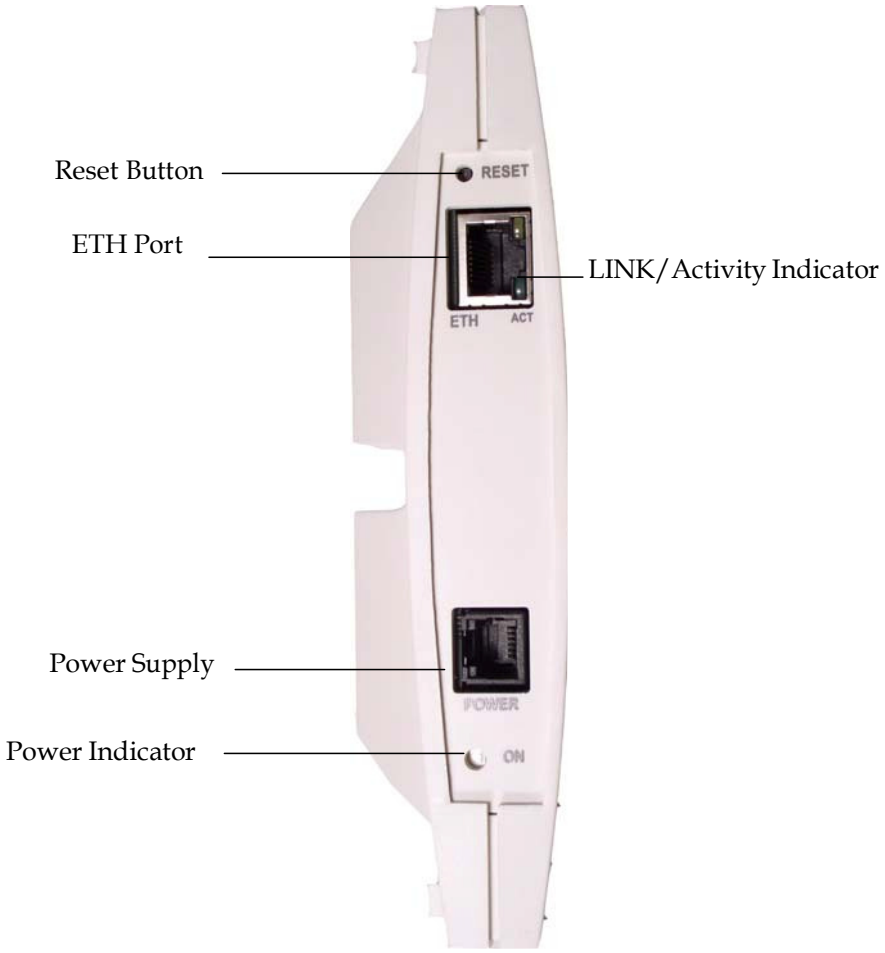
- LED that indicates the operating status of the unit

Figure 4-1 *KWS6000/Media Resource - Front view*



The KWS6000/media resource faceplate includes the following (see figure below).

Figure 4-2 *KWS6000/Media Resource - Faceplate*



For information about the Reset button, refer to "Resetting the KWS6000/KIRK Media Resource Hardware" on page 4-6.

KWS6000/KIRK Media Resource LED Indicators

Front Cover

The KWS6000/media resource front cover has one indicator describing the faults and failures of the device. The indicator is off when the KWS6000/media resource is not powered. The LED flashes when the KWS6000/media resource initializes. The indicator is on when the KWS6000/media resource is operating.

Table 4-3 LED Indicator Description - Front Cover

LED Indicator	Meaning
Steady green	OK and idle
Slow green flashing	OK and active voice call
Fast green flashing	Active, in operation with the maximum active connections (busy)
Slow red flashing	Missing media resource or base station (if it is a media resource: missing connection to KWS6000)
Fast red flashing	Error
Steady red	Reset/shutdown in progress
Steady red for 5 seconds followed by fast red flashing	Reset to factory settings

Faceplate

Table 4-4 LED Indicator Description - Faceplate

LED Indicator	Meaning
LINK/Activity Indicator - green	Link layer software has established connection
LINK/Activity Indicator - green flashing	Activity
Power Indicator - green	KWS6000 is connected to Power

KWS6000/KIRK Media Resource - Reset Button

It is possible to restart or reset the KWS6000/media resource by pressing the Reset button on the faceplate of the KWS6000/media resource. For description of the faceplate, refer to "Faceplate" on page 4-5.

Resetting the KWS6000/KIRK Media Resource Hardware

This section contains a description of the different actions that take place when pressing the Reset button.

Table 4-5 Reset Button Description

Press button	Action
Short press (2 to 5 sec.)	System restarts when button is released.
Long press (5 to 9 sec.) until front LED flashes red, then release button	Resets the system to factory default settings (original IP settings and empty user data base) and restarts the system. Firmware version is not affected.

Installing the KWS6000/KIRK Media Resource

The KWS6000/media resource is suitable for mounting indoors on a wall.

1 Mount the KWS6000/media resource on the wall, using the anchors and screws provided.

Note: When you place the KWS6000/media resource on the screws, ensure that the screws do not touch the printed circuit board.

Figure 4-3 KWS6000/Media Resource Wall Mounting

2 Connect the wire into the RJ45 plug on the KWS6000/media resource.

5

Installing KIRK Codec Module

This section provides a description of the Codec Module and describes how to unpack and install it in a media resource. The Codec Module adds a number of codecs, allowing the wireless server to interface to G.729A.

Note

When installing a Codec Module, the media resource only adds 24 voice channels to the system. Adding 32 media resources with codec cards makes it possible to have 768 calls at the same time.

For more information about media resources, refer to "Installing KIRK Wireless Server 6000 and KIRK Media Resource" on page 4-1.

This section contains the following information:

- "Description of KIRK Codec Module" on page 5-2
- "Installing the KIRK Codec Module" on page 5-3

Description of KIRK Codec Module

This section contains information about:

- "KIRK Codec Module Type and Part Number" on page 5-2
- "KIRK Codec Module Appearance" on page 5-2

KIRK Codec Module Type and Part Number

Table 5-1 KIRK Codec Module Part Number

Codec Module for KIRK Wireless Server 6000	Part Number
KIRK Codec Module	0234 4300

KIRK Codec Module Appearance

Figure 5-1 *Codec Module*

Installing the KIRK Codec Module

This section describes how to install the Codec Module in a media resource.

Note Installation must be performed by authorized personal only and must be performed at an approved ESD workstation.

How to install the Codec Module

1 Power off the media resource.

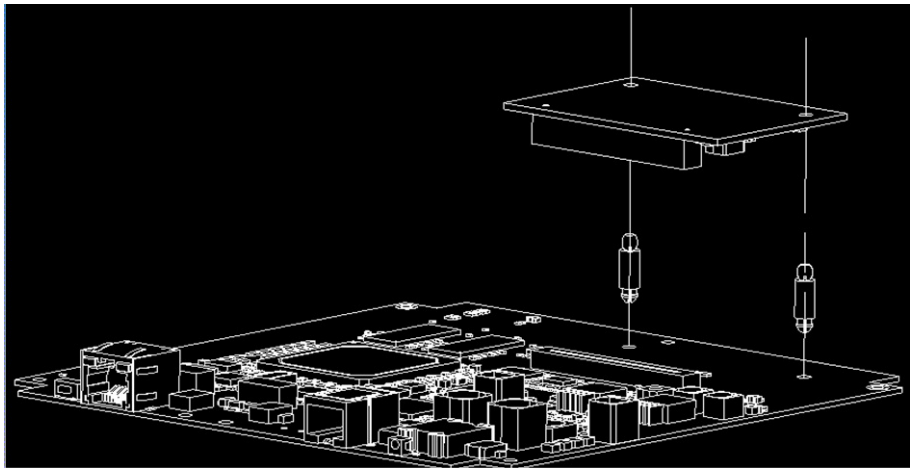
2 Remove the cover of the media resource carefully:

- Place the media resource face down on a desk.
- Apply sufficient pressure to the tabs located at each of the four corners of the unit while gently lifting the cover from the chassis.
- Once separated, set the front cover aside in a safe location.

3 Snap the two support posts into the printed circuit board of the media resource.

4 Carefully insert the Codec Module into the Codec Module connector and the two support posts on the printed circuit board.

Figure 5-2 Installing Codec Module on Pinted Circuit Board



5 Replace the cover by aligning the tabs with the proper positions and gently press the cover onto the chassis until the tabs lock into place.

6 Connect the LAN cable to the media resource.

7 Power up the media resource.

8 When accessing the web based Administration Page of the KWS6000 under **Administration/Media Resource**, you can now see that more codecs are available.

For information about accessing the web based Administration Page, refer to "Accessing the Web Based Administration Page" on page 10-3.

6

Installing KIRK Base Station

This section provides information about the base station and how to install it.

Before you install the equipment, ensure that a site planner defines the location of the base stations.

This section includes information about:

- "KIRK Base Station Description" on page 6-1
- "Installing the KIRK Base Station" on page 6-5
- "Recording the Installation Information" on page 6-6

KIRK Base Station Description

This section contains information about:

- "KIRK Base Station provides RF Channels to KIRK Handsets" on page 6-1
- "KIRK Base Station Types and Part Numbers" on page 6-2
- "KIRK Base Station Appearance and Components" on page 6-2
- "KIRK Base Station LED Indicators" on page 6-4
- "KIRK Base Station - Reset Button" on page 6-5

KIRK Base Station provides RF Channels to KIRK Handsets

The base station is a compact device that contains RF circuitry and transmit/receive antennas. The main function of the base station is to provide audio and data communication between the handsets and the KWS6000. The base station supports 11 RF channels for DECT or USA DECT bands.

Note The base station is also termed by some manufacturers as the RFP (Radio Fixed Part).

The RF communication is provided according to the band standard at the site:

- Base station - DECT provides 11 RF channels of 1.8 GHz, DECT standard, used in Europe, Australia and South America.
- Base station - USA DECT provides 11 RF channels of the 1.9 GHz, USA DECT standard, used in North America.

KIRK Base Station Types and Part Numbers

The base station contain RF circuitry that comply with the local band standards: UPCS, DECT, or ETSI DECT. The table below includes a list of available base stations and their part numbers.

Table 6-1 *KIRK Base Station Part Numbers*

Variants of KIRK Base Stations	Part Number
KIRK Base Station 12 1.8 GHz (conforms with standard DECT markets)	02337300
KIRK Base Station 12 1.9 GHz (for North America)	02337301

KIRK Base Station Appearance and Components

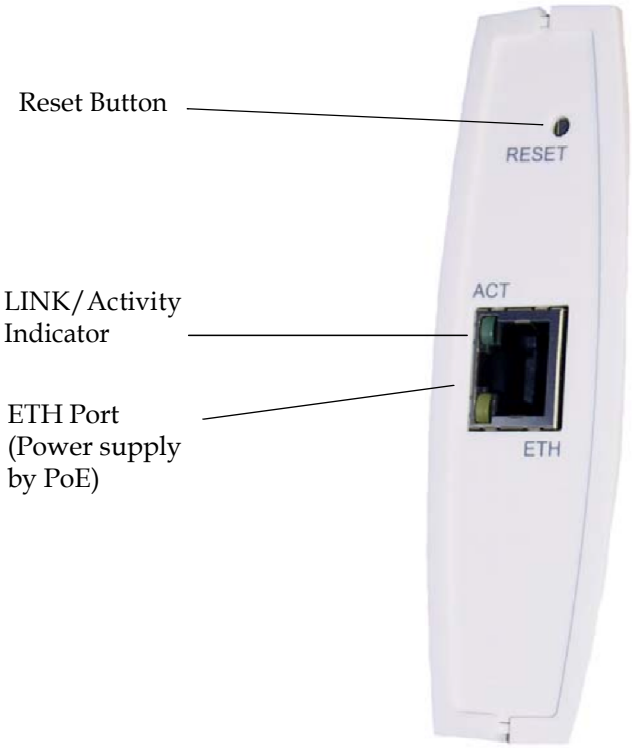
The base station front cover includes the following:

- LED that indicates the operating status of the unit

Figure 6-1 *Base Station - Front view*

The base station faceplate includes the following (see figure below).

Figure 6-2 *Base Station - Faceplate*



For information about the Reset button, refer to "Resetting the KIRK Base Station Hardware" on page 6-5.

KIRK Base Station LED Indicators

Front Cover

The base station front cover has one indicator describing the base station faults and failures. The indicator is off when the base station is not powered. The LED flashes when the base station initializes. The indicator is on when the base station is operating.

Table 6-2 *LED Indicator Description - Front Cover*

LED Indicator	Meaning
Steady green	OK and idle
Slow green flashing	OK and active voice call
Fast green flashing	Active, in operation with the maximum active connections (busy)
Slow red flashing	Missing media resource or base station (if it is a media resource: missing connection to KWS6000)
Fast red flashing	Error
Steady red	Reset/shutdown in progress
Steady red for 5 seconds followed by fast red flashing	Reset to factory settings

Faceplate

Figure 6-3 *LED Indicator Description - Faceplate*

LED Indicator	Meaning
LINK/Activity Indicator - green	Link layer software has established connection
LINK/Activity Indicator - green flashing	Activity
Power Indicator - green	KWS6000 is connected to Power

KIRK Base Station - Reset Button

It is possible to restart or reset the base station by pressing the Reset button on the faceplate of the base station. For description of the faceplate, refer to "Faceplate" on page 6-4.

Resetting the KIRK Base Station Hardware

This section contains a description of the different actions that take place when pressing the Reset button.

Table 6-3 Reset Button Description

Press button	Action
Short press (2 to 5 sec.)	System restarts when button is released.
Long press (5 to 9 sec.) until front LED flashes red, then release button	Resets the system to factory default settings (original IP settings and empty user data base) and restarts the system. Firmware version is not affected.

Installing the KIRK Base Station

The base station is suitable for mounting indoors on a wall.

Note Before beginning the installation, determine the position of the base station for best coverage. The coverage depends on the construction of the building, architecture, and the choice of building materials. Refer to "Environmental Requirements" on page 2-8 for more information about environmental requirements for base stations.

Wall Mounted (Vertical) Installation RF Coverage

For best RF coverage, the base station must be mounted vertically on walls.

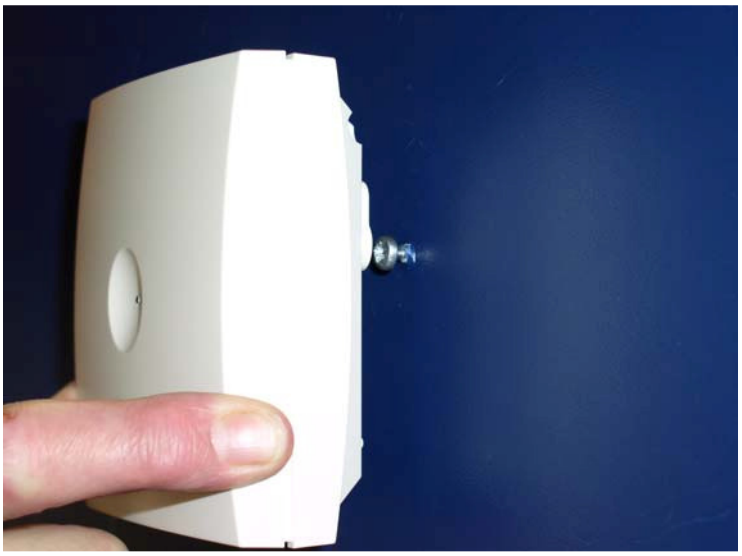
Caution: The base station must not be installed at any angle other than vertical.

Caution: Do not mount the base station on soft surfaced walls such as those covered with canvas, metal or sponge-like materials.

1 Mount the base station on the wall using the anchors and screws accompanying the product.

Note: When you place the base station on the screws, ensure that the screws **do not** touch the printed circuit board.

Figure 6-4 Base Station Wall Mounting



2 Connect the RJ45 plug to the ethernet connector at the bottom of the base station.

Figure 6-5 Base Station - Ethernet Connector

Recording the Installation Information

After completing the installation of the base stations, record the location of each base station and add a descriptive text in the Administration Page of the KWS6000 under **Administration/Base stations**.

6

Installing KIRK Repeater

This section provides information about the repeater and how to unpack and install it. Installing repeaters requires a software installation as well as a hardware installation.

Before you install the equipment, ensure that a site planner defines the location of the repeaters.

This section includes information about:

- "KIRK Repeater Description" on page 6-1
- "Installing the KIRK Repeater" on page 6-4
- "Recording the Installation Information" on page 6-7
- "Checking Indicators" on page 6-7
- "Powering the KIRK Repeater" on page 6-7
- "Programming a KIRK Repeater with the KIRK Programming Kit" on page 6-7

KIRK Repeater Description

This section contains information about:

- "KIRK Repeater provides RF Channels to KIRK Handsets" on page 6-1
- "KIRK Repeater - Appearance and Components" on page 6-3
- "KIRK Repeater LED Indicators" on page 6-4

KIRK Repeater provides RF Channels to KIRK Handsets

The KIRK Repeater is a building block to be used to extend the coverage area in a KIRK solution. The repeater does not increase the number of traffic channels, however it provides a larger physical spreading of the traffic channels and thereby increases the coverage area established with the KIRK

Base Stations.The repeaters are mainly used in areas with limited traffic. The KIRK Repeater is available with either 2 or 4 voice channels. It is wireless and does not need physical connection to the KIRK Wireless Server, making it very easy to install. The repeaters can be supplied with an external antenna making it possible to create radio coverage in a remote area without cabling to the rest of the installation.

Note

The repeater is also termed by some manufacturers as the WRFP (Wireless Radio Fixed Part).

The RF communication is provided according to the band standard at the site:

- Repeater - DECT provides four RF channels of 1.88 GHz, DECT standard, used in Europe, Australia and South America.
- Repeater - USA DECT provides four RF channels of 1.9 GHz, USA DECT standard, used in North America.

KIRK Repeater - Appearance and Components

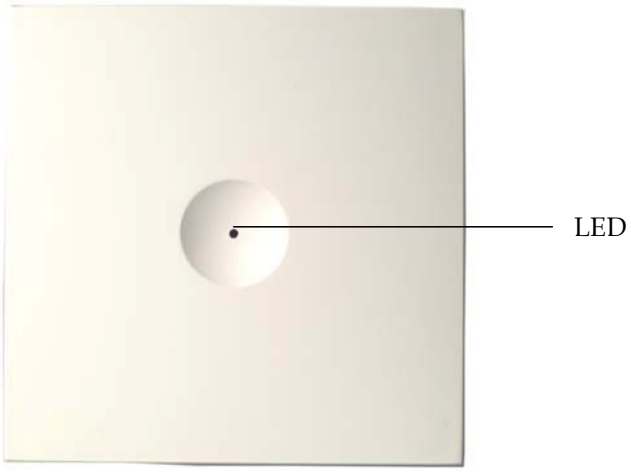
The repeater connection panel includes the following:

- Power supply connection (connection for programming the repeater as well).
- Antenna connector for repeaters supplied with external antenna connection.

  Note: The external antenna incl. antenna cable is to be ordered separately

- LED that indicates whether or not the unit is functioning.

Figure 6-1 Repeater



KIRK Repeater LED Indicators

The repeater has one LED indicator describing the repeater operations. The indicator is off when the repeater is not powered. The LED flashes when the repeater initializes, and it is on when the repeater is in sync. The LED flashes each time a connected handset is off or on hook or makes handover from or to a repeater.

Installing the KIRK Repeater

Before beginning the installation, determine the position of the repeater for best coverage. The coverage depends on the construction of the building, architecture, and the choice of building materials.

Environmental requirements

- Avoid installing repeaters on large concrete or marble columns because these columns affect radio coverage. If possible, place the base station a minimum of one meter/3.3 feet from these types of columns.
- Do not install a repeater with the antenna housings near metal objects. Be careful not to damage existing wiring or panels.
- Do not position repeaters in ducts, plenums or hollow spaces used to transport environmental air except where the duct, plenum or hollow space is created by a suspended ceiling having lay-in panels.
- Keep the repeater away from steel constructions.
- Do not position repeaters directly on metallic surfaces. If possible, place the base station a minimum of one meter/3.3 feet from these types of surfaces.
- Do not position repeaters behind furniture.
- Only position repeaters where the signal is needed.
- The installation area must be clean, free of traffic and excess dust, dry, and well ventilated.
- The installation area must be within the temperature ranges of 10°C and 40°C/50°F and 104°F.
- The installation area must be between 20% and 80% non-condensing relative humidity.

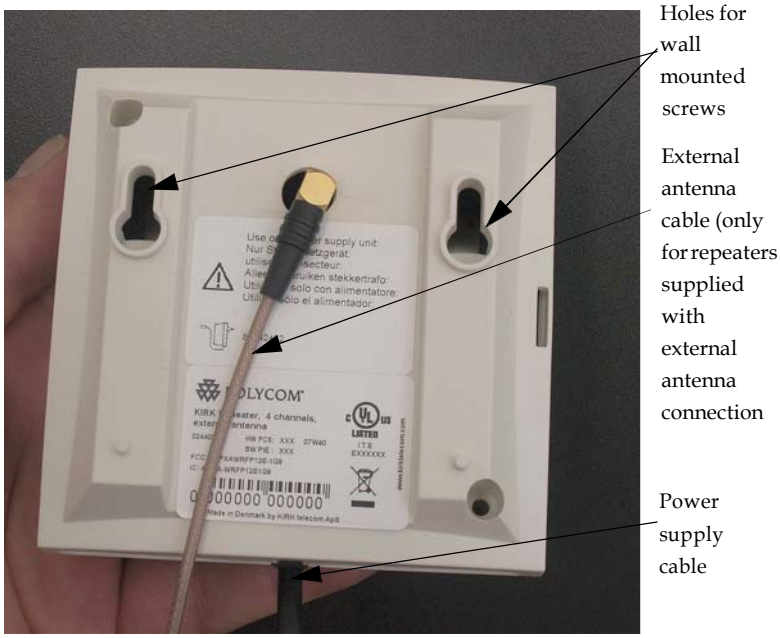
Note The repeater does not add channels, it only adds additional coverage area.

Note The repeater can be registered on the system 1) when placed within the coverage area of a base station 2) when placed within the coverage area of an already-installed repeater or 3) when placed outside the coverage area using an external antenna.

For best RF coverage, the repeater must be mounted vertically on walls. The antennas must always be kept perpendicular to the floor.

Caution The repeater must not be installed at any angle other than vertical.

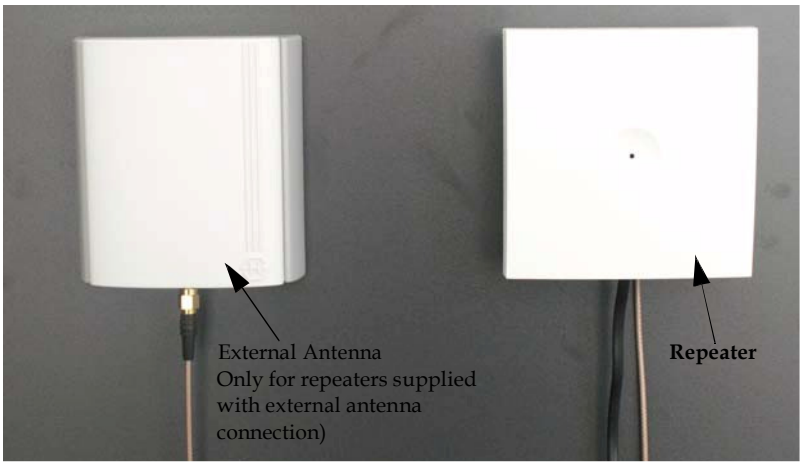
Figure 6-2 *Connect Power to the Bottom of the Repeater and External Antenna Cable to the Rear of the Repeater*


Holes for wall mounted screws
External antenna cable (only for repeaters supplied with external antenna connection
Power supply cable

1 Connect the power supply cable into the RJ11 connector in the bottom of the repeater. For repeaters with external antenna, connect the external antenna cable to the antenna connector in the rear of the repeater as well.

2 Mount the repeater onto the wall using the screws accompanying the repeater.

Figure 6-3 *Repeater and External Antenna Installed on the Wall*



Note: The external antenna used for the transmitter is to be fixed-mounted on indoor permanent structures providing a separation distance of at least 20 cm / 8 inches from all persons during normal operation and must not be co-located or operating in conjunction with any other antenna or transmitter. The maximum radiated output power is 1W e.i.r.p. For more information and technical support, please refer to www.polycom.com.

Recording the Installation Information

After completing the installation of the repeaters, record the location of each repeater.

Checking Indicators

Verify that the repeater LED indicator is continuously on, indicating that the repeater is functional.

Powering the KIRK Repeater

Power Options

The power supply for the repeater is 9VDC, 300mA.

Programming a KIRK Repeater with the KIRK Programming Kit

This section provides information about:

- "Content of the KIRK Programming Kit Repeater" on page 6-7
- "Set up of the Hardware for Repeater Programming" on page 6-8
- "Programming the KIRK Repeater with the ServiceTool" on page 6-9

Content of the KIRK Programming Kit Repeater

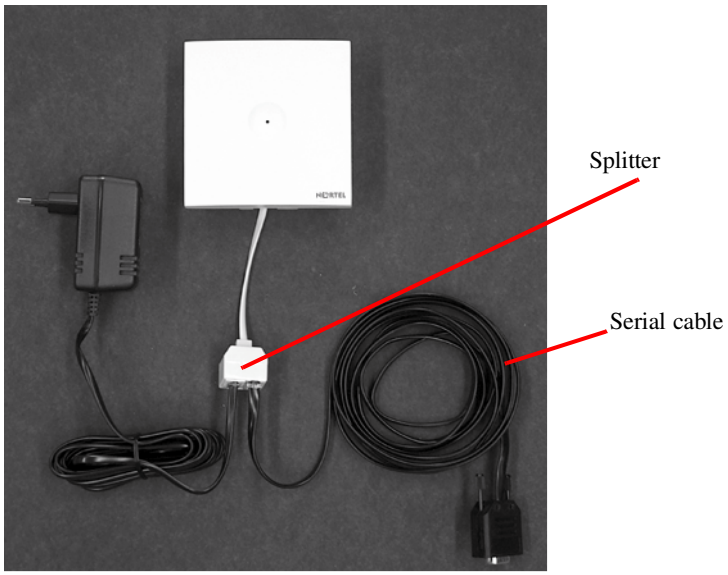
The Programming Kit Repeater (Part no. 02319508) consists of:

- splitter
- serial cable

Note

For programming the repeater you also need the programming software (ServiceTool) and the power supply for the repeater. The ServiceTool is not part of the Programming Kit Repeater but can be downloaded from www.polycom.com. The power supply for the repeater is to be ordered separately.

Figure 6-4 *Programming Kit Repeater*



Set up of the Hardware for Repeater Programming

1. Unplug the repeater power supply and insert the splitter.
2. Connect the repeater power supply to the splitter and the mains. LED flashes.

   Note: Ensure that you have the appropriate power supply for the local requirements.
3. Connect the serial cable to the splitter and Com port of your computer.

   The repeater is now ready for programming via the ServiceTool.

   Note: The above mentioned order of the set up (point 1, 2 and 3) is important.

Programming the KIRK Repeater with the ServiceTool

The ServiceTool is the tool you access from your desktop and use for repeater programming, handset adjustment and software download to the handset and repeater.

The ServiceTool identifies the type of repeater, and with this software it is possible to program the KIRK Repeater to connect to the KIRK DECT Radio Infrastructure solutions.

Before you start programming the repeater, ensure that the repeater is connected to the computer and the mains.

In a single cell solution the numbers assigned to the repeaters must be between 2 and 7. The number of the base station is default set to 1.

In a multi cell solution, the numbering of the base stations and repeaters has to follow the numbering in the table below.

Table 6-2 *Repeater Numbering in a Multi Cell Solution*

Base Station	Repeater 1	Repeater 2	Repeater 3
0	64	128	192
1	65	129	193
2	66	130	194
3	67	131	195
4	68	132	196
5	69	133	197
6	70	134	198
7	71	135	199
8	72	136	200
9	73	137	201
10	74	138	202
11	75	139	203
12	76	140	204
13	77	141	205
14	78	142	206
15	79	143	207
16	80	144	208
17	81	145	209
18	82	146	210
19	83	147	211
20	84	148	212
21	85	149	213

Table 6-2 *Repeater Numbering in a Multi Cell Solution*

Base Station	Repeater 1	Repeater 2	Repeater 3
22	86	150	214
23	87	151	215
24	88	152	216
25	89	153	217
26	90	154	218
27	91	155	219
28	92	156	220
29	93	157	221
30	94	158	222
31	95	159	223
32	96	160	224
33	97	161	225
34	98	162	226
35	99	163	227
36	100	164	228
37	101	165	229
38	102	166	230
39	103	167	231
40	104	168	232
41	105	169	233
42	106	170	234
43	107	171	235
44	108	172	236
45	109	173	237
46	110	174	238
47	111	175	239
48	112	176	240
49	113	177	241
50	114	178	242
51	115	179	243
52	116	180	244
53	117	181	245
54	118	182	246
55	119	183	247
56	120	184	248

Table 6-2 *Repeater Numbering in a Multi Cell Solution*

Base Station	Repeater 1	Repeater 2	Repeater 3
57	121	185	249
58	122	186	250
59	123	187	251
60	124	188	252
61	125	189	253
62	126	190	254
63	127	191	255
64	128	192	0
65	129	193	1
66	130	194	2
67	131	195	3
68	132	196	4
69	133	197	5
70	134	198	6
71	135	199	7
72	136	200	8
73	137	201	9
74	138	202	10
75	139	203	11
76	140	204	12
77	141	205	13
78	142	206	14
79	143	207	15
80	144	208	16
81	145	209	17
82	146	210	18
83	147	211	19
84	148	212	20
85	149	213	21
86	150	214	22
87	151	215	23
88	152	216	24
89	153	217	25
90	154	218	26
91	155	219	27

Table 6-2 *Repeater Numbering in a Multi Cell Solution*

Base Station	Repeater 1	Repeater 2	Repeater 3
92	156	220	28
93	157	221	29
94	158	222	30
95	159	223	31
96	160	224	32
97	161	225	33
98	162	226	34
99	163	227	35
100	164	228	36
101	165	229	37
102	166	230	38
103	167	231	39
104	168	232	40
105	169	233	41
106	170	234	42
107	171	235	43
108	172	236	44
109	173	237	45
110	174	238	46
111	175	239	47
112	176	240	48
113	177	241	49
114	178	242	50
115	179	243	51
116	180	244	52
117	181	245	53
118	182	246	54
119	183	247	55
120	184	248	56
121	185	249	57
122	186	250	58
123	187	251	59
124	188	252	60
125	189	253	61
126	190	254	62

Table 6-2 *Repeater Numbering in a Multi Cell Solution*

Base Station	Repeater 1	Repeater 2	Repeater 3
127	191	255	63
128	192	0	64
129	193	1	65
130	194	2	66
131	195	3	67
132	196	4	68
133	197	5	69
134	198	6	70
135	199	7	71
136	200	8	72
137	201	9	73
138	202	10	74
139	203	11	75
140	204	12	76
141	205	13	77
142	206	14	78
143	207	15	79
144	208	16	80
145	209	17	81
146	210	18	82
147	211	19	83
148	212	20	84
149	213	21	85
150	214	22	86
151	215	23	87
152	216	24	88
153	217	25	89
154	218	26	90
155	219	27	91
156	220	28	92
157	221	29	93
158	222	30	94
159	223	31	95
160	224	32	96
161	225	33	97

Table 6-2 *Repeater Numbering in a Multi Cell Solution*

Base Station	Repeater 1	Repeater 2	Repeater 3
162	226	34	98
163	227	35	99
164	228	36	100
165	229	37	101
166	230	38	102
167	231	39	103
168	232	40	104
169	233	41	105
170	234	42	106
171	235	43	107
172	236	44	108
173	237	45	109
174	238	46	110
175	239	47	111
176	240	48	112
177	241	49	113
178	242	50	114
179	243	51	115
180	244	52	116
181	245	53	117
182	246	54	118
183	247	55	119
184	248	56	120
185	249	57	121
186	250	58	122
187	251	59	123
188	252	60	124
189	253	61	125
190	254	62	126
191	255	63	127
192	0	64	128
193	1	65	129
194	2	66	130
195	3	67	131
196	4	68	132

Table 6-2 *Repeater Numbering in a Multi Cell Solution*

Base Station	Repeater 1	Repeater 2	Repeater 3
197	5	69	133
198	6	70	134
199	7	71	135
200	8	72	136
201	9	73	137
202	10	74	138
203	11	75	139
204	12	76	140
205	13	77	141
206	14	78	142
207	15	79	143
208	16	80	144
209	17	81	145
210	18	82	146
211	19	83	147
212	20	84	148
213	21	85	149
214	22	86	150
215	23	87	151
216	24	88	152
217	25	89	153
218	26	90	154
219	27	91	155
220	28	92	156
221	29	93	157
222	30	94	158
223	31	95	159
224	32	96	160
225	33	97	161
226	34	98	162
227	35	99	163
228	36	100	164
229	37	101	165
230	38	102	166
231	39	103	167

Table 6-2 *Repeater Numbering in a Multi Cell Solution*

Base Station	Repeater 1	Repeater 2	Repeater 3
232	40	104	168
233	41	105	169
234	42	106	170
235	43	107	171
236	44	108	172
237	45	109	173
238	46	110	174
239	47	111	175
240	48	112	176
241	49	113	177
242	50	114	178
243	51	115	179
244	52	116	180
245	53	117	181
246	54	118	182
247	55	119	183
248	56	120	184
249	57	121	185
250	58	122	186
251	59	123	187
252	60	124	188
253	61	125	189
254	62	126	190
255	63	127	191

Note

Repeater and base station numbers must not be the same. Neither can the repeater have a number similar to another base station or another repeater in a situation where common overlap is present between the actual units (Numbers with red colour show where numbering could be identical between different units). If this occurs, handover between the different units is not possible.

Table 6-3 *Example of a Normal Base Station/Repeater Configuration*

Numbering of base stations and repeaters in a normal configuration	
First repeater	No. of base station + 64 Base to synchronize on: Number of base station
Second repeater	No. of base station + 128 Base to synchronize on: Number of base station
Third repeater	No. of base station + 192 Base to synchronize on: Number of base station

Table 6-4 *Example of Repeater Jump Configuration*

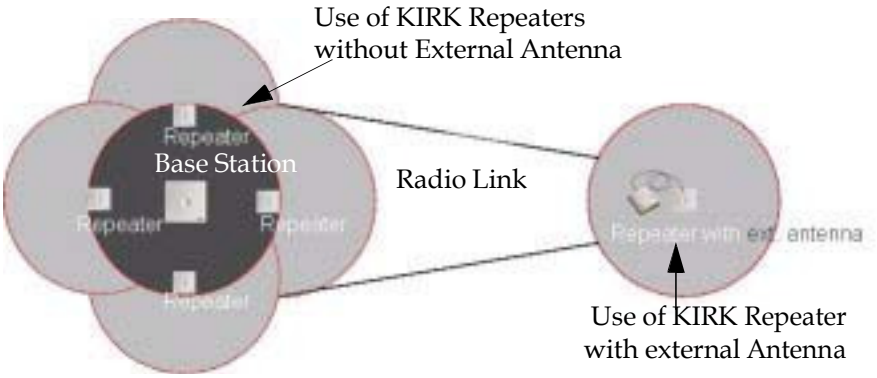
Numbering of repeaters in a repeater jump configuration	
First repeater in chain	No. of base station + 64 Base to synchronize on: Number of base station
Second repeater in chain	No. of base station + 128 Base to synchronize on: Number of previous repeater
Third repeater in chain	No. of base station + 192 Base to synchronize on: Number of previous repeater

For more information about programming the repeater with the ServiceTool, refer to the Help File in the ServiceTool. The ServiceTool is to be downloaded from www.polycom.com.

Use of KIRK Repeater With External Antenna

If radio coverage between a base station and a repeater is not needed, it is possible to synchronize between the radio units using a repeater with external antenna.

Figure 6-5 Use of Repeaters



The distance from the repeaters without external antenna to the base station must correspond to a RSSI loss of maximum 25dB.

Be aware that inside the area named “radio link” there is no radio coverage, and therefore a wireless handset cannot be used in this area.

The distance between the base station and the repeater with external antenna depends on the type of antenna used as well as on the signal attenuation created by surroundings such as buildings, trees, etc.

Synchronization Ways

The repeater with external antenna, 4 channels, can be programmed to obtain synchronization on two radio units (base station, wireless server or repeater).

If a situation occurs where the primary sync for some reason breaks down, the repeater will obtain sync on the alternative sync.

Be aware that the primary sync has priority; the alternative sync is only in use as long as the primary sync is down.

9

Basic Network Configuration

This section provides you with information on basic network configuration. Basic network settings can be derived from a DHCP server or entered manually through TCP/IP Setup.

Using DHCP the device requests and obtains an available IP address from a DHCP server. The device also obtains other parameters such as the default gateway, subnet mask, DNS server, Time server and other IP parameters from the DHCP server.

Using manual TCP/IP Setup the IP addresses and other networking parameters are entered manually through the web based Administration Page. The static IP addresses are unique, provided and managed by your system administrator.

This section contains information about:

- "Recommended Network Configuration" on page 9-1
- "Assigning DHCP Server Options" on page 9-2
- "Assigning DHCP Server Reservations" on page 9-2

Recommended Network Configuration

When configuring a KWS6000 Solution, it is strongly recommended to configure:

- KWS6000 using static IP address
- Media resources using DHCP
- Base stations using DHCP

Note When using DHCP on base stations and media resources, the KWS6000 must have either a static IP address or IP address reservations assigned to the DHCP server.

If the KWS6000 Solution is configured as recommended above, it is possible to assign options to the DHCP server making it extremely easy to configure all media resources and base stations. For more information about assigning options to the DHCP server, refer to "Assigning DHCP Server Options" on page 9-2.

If the KWS6000 is configured using DHCP, it is necessary to assign a reservation for the device on the DHCP server. For more information about assigning reservations to the DHCP server, refer to "Assigning DHCP Server Reservations" on page 9-2.

Assigning DHCP Server Options

You can provide information about the static IP address of the KWS6000 in the DHCP server through DHCP options. When defining the IP address of the KWS6000 in the DHCP server, all media resources and base stations are configured automatically.

Below you will find a description of how to assign options to a DHCP server when opening a DHCP server console (MS 2000/2003 DHCP Server):

- When adding a new class you must enter the following information:
  - Display name: **KIRK IP6000**
  - Description: **KIRK Wireless Server 6000 Solution**
  - ASCII: **KIRK.IP6000** (case sensitive)
- When adding a new option you must enter the following information:
  - Name: **KWS6000**
  - Type: **String**
  - Code: **43**
- Select options **43**.
- Enter the IP address of the KIRK Wireless Server 6000.

Assigning DHCP Server Reservations

If the KWS6000 is configured using DHCP, it is necessary to assign a reservation for the device on the DHCP server.

10

Configuring KIRK Wireless Server 6000

This section provides you with information on how to power up the KWS6000 and connect the unit to a computer. It also provides information on how to configure a KWS6000 through the web based Administration Page using either DHCP or static IP address.

Note The KWS6000 is pre-configured to use a static IP address.

This section includes information about:

- "Powering up the KWS6000" on page 10-1
- "Connecting a Computer to the KWS6000" on page 10-2
- "Accessing the Web Based Administration Page" on page 10-3
- "Configuring a KIRK Wireless Server 6000 Using Static IP Address" on page 10-7
- "Configuring a KIRK Wireless Server 6000 Using DHCP" on page 10-15
- "Checking Indicators" on page 10-17
- "Making a Back-Up of the Configuration File" on page 10-17

Powering up the KWS6000

After installing the KWS6000 you need to power up the unit using:

- Local power supply

  Power options for the KWS6000 is 48VDC, 1 W maximum when using local power supply.

Local Power Supply

Powering the KWS6000 with a local power supply can be done using the power input on the unit.

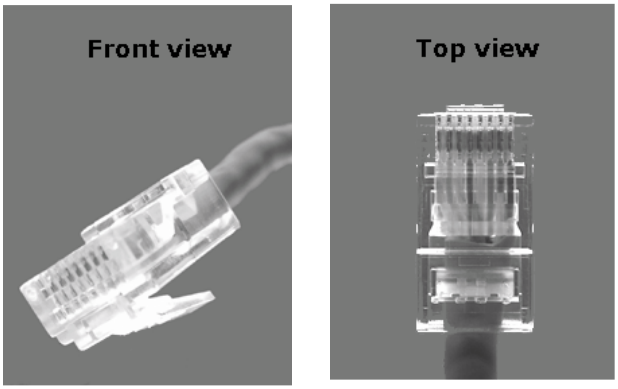
Note The power supply for the KWS6000 is to be ordered separately (Part no. EU, UK and US version: 84642468).

Connecting a Computer to the KWS6000

The KWS6000 communicates with the computer through a cross-over patch cable.

Note The LAN port of the KWS6000 is a RJ45 connector.

Figure 10-1 *Cross-over patch cable (RJ45)*



1 Connect the cross-over patch cable to the computer.

2 Connect the cross-over patch cable to the **ETH** port of the KWS6000.

Accessing the Web Based Administration Page

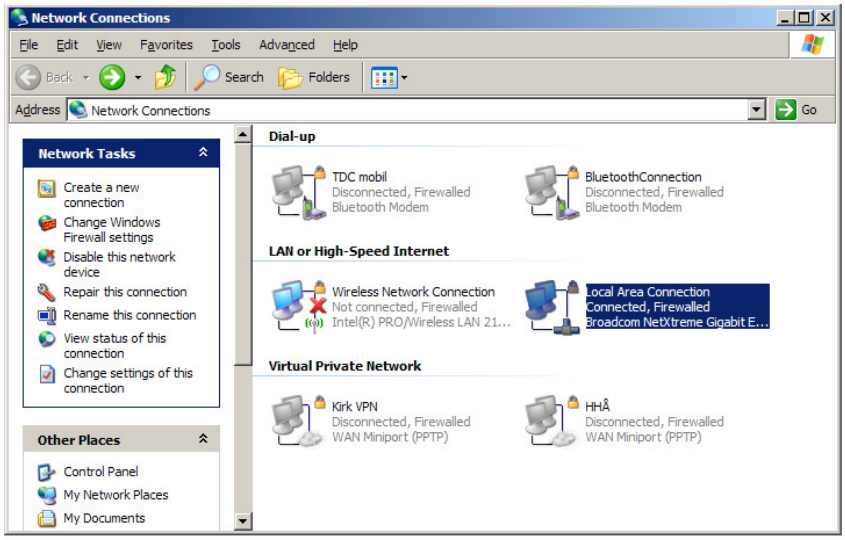
In order for your computer to communicate with the KWS6000 it is necessary to change the computer's Internet Protocol Properties to have an IP address on the same subnet as the KWS6000.
Below is shown an example on an IP address on the same subnet as the KWS6000 default IP address:

- IP address: **192.168.0.2**
- Sub-net mask: **255.255.255.0**

How to Change Internet Protocol Properties using Windows XP

1 From the Start menu, point to **Connect to** and then click **Show all connections**.

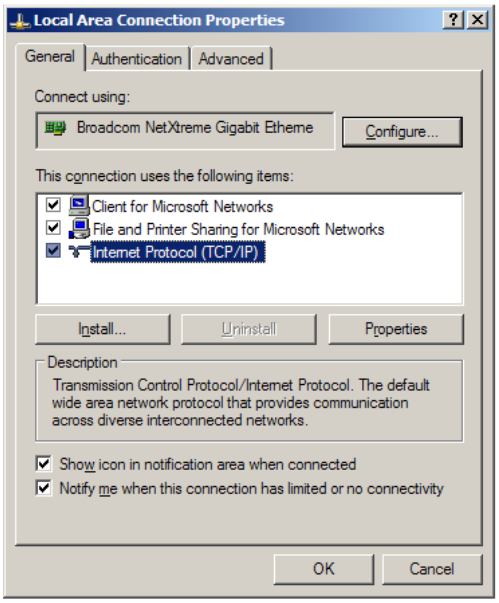
A **Network Connections** window appears.



2 Under **Lan or High-Speed Internet**, right-click on **Local Area Connection** and click **Properties**.

A **Local Area Connection Properties** dialog box appears.

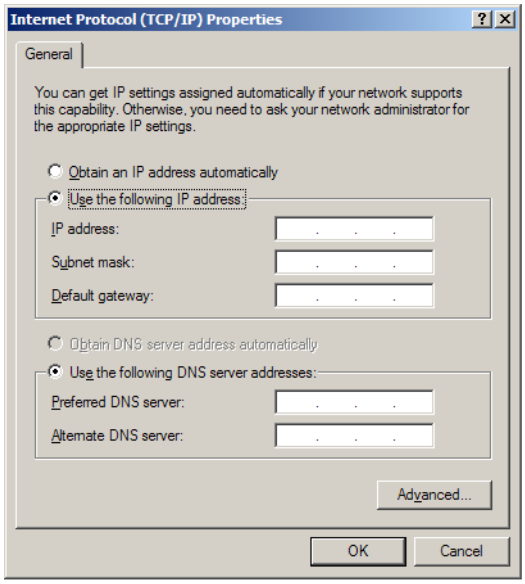
Figure 10-2 *Local Area Connection Properties dialog box*



3 In the **General** tab, select **Internet Protocol (TCP/IP)**, and then click **Properties**.

An **Internet Protocol (TCP/IP) Properties** dialog box appears.

Figure 10-3 *Internet Protocol Properties dialog box*


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

4 Click **Use the following IP address**, and then type **192.168.0.2** in the **IP address** field.

5 In the **Subnet mask** field, type **255.255.255.0**.

6 Click **OK**.

You can now reach the KWS6000 using a standard web browser.

How to Access the Administration Page

The web based Administration Page is accessed through a standard web browser.

1 Open a web browser.

2 In the browsers **Address** bar, type **http://192.168.0.1**, and then press **ENTER**.

The KWS6000 Administration Page appears.

Figure 10-4 *Main page of the Administration Page for wireless server*

Entering a System User Name and Password

First time you access the Administration Page, you need to log on with user name and a password.

Note

The default user name of the system is **admin** and the default password of the system is **ip6000**. It is strongly recommeded to change the password, refer to "Changing System User Name and Password" on page 15-2.

Figure 10-5 *Adm. Page: Enter Network Password dialog box*

1 In the **User Name** field, type **admin**.

2 In the **Password** field, type **ip6000**.

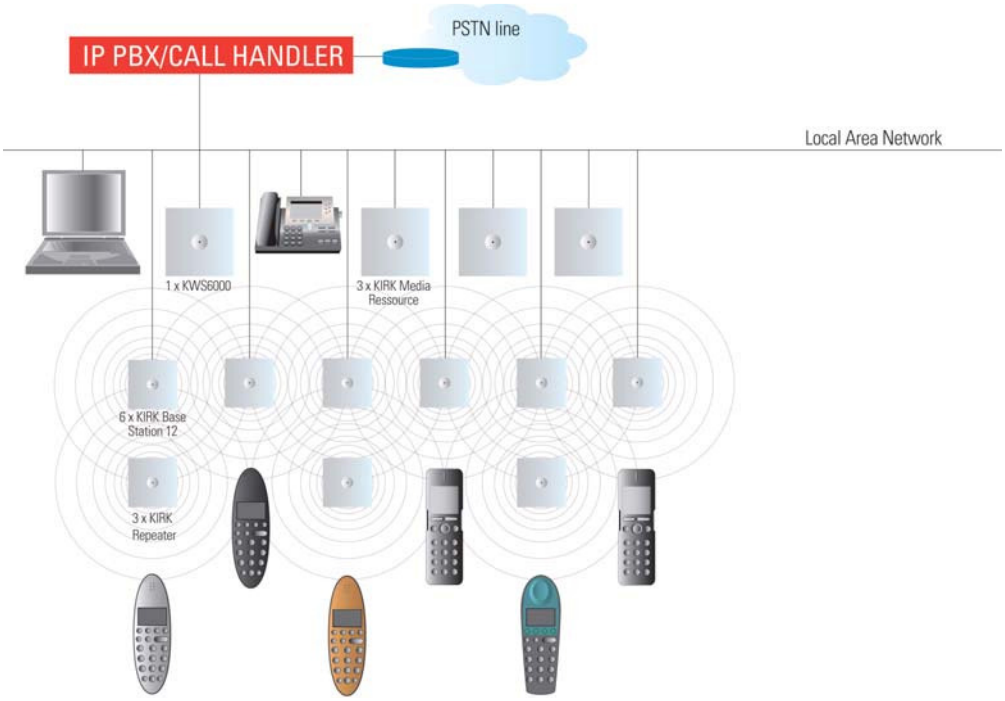
3 Click **OK**.

Configuring a KIRK Wireless Server 6000 Using Static IP Address

This section describes how to configure a KWS6000 using static IP address.

Note The KWS6000 is pre-configured to use a static IP address. It is strongly recommended to configure the KWS6000 using static IP address.

Figure 10-6 *KWS6000 installation*



For information on accessing the web based Administration Page, refer to "Accessing the Web Based Administration Page" on page 10-3.

This section contains information about:

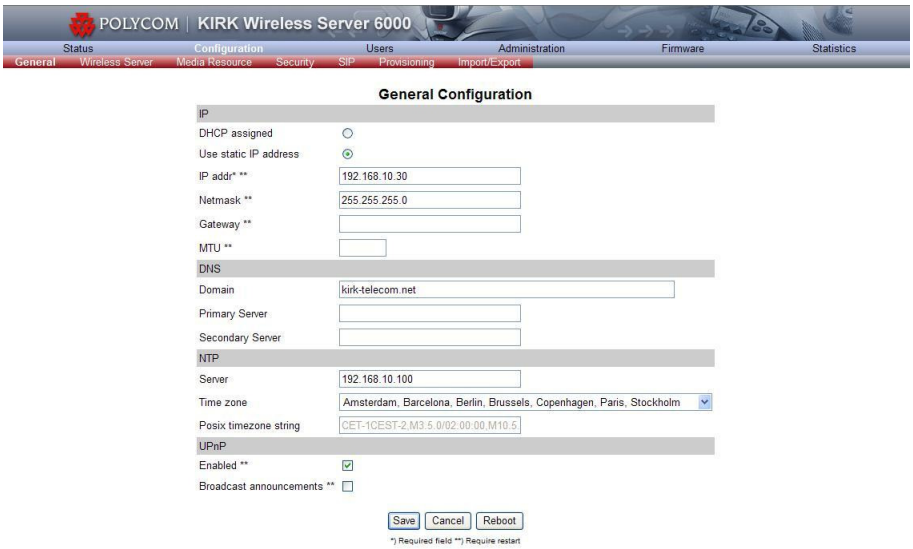
- "General Configuration" on page 10-8
- "Wireless Server Configuration" on page 10-9
- "Built-In Media Resource Configuration" on page 10-10
- "SIP Configuration" on page 10-11
- "Security Configuration" on page 10-14

General Configuration

On the **Configuration/General** page you define IP, DNS and NTP settings for the KWS6000.

1 Click **Configuration**, and then click **General**.

Figure 10-7 *Adm. Page WS: Configuration/General page*



2 Click **Use Static IP Address**.

3 In the **IP Addr** field, type the IP address of the KWS6000.

4 In the **Netmask** field, type a new network mask (optional).

Contact your system administrator for more information.

5 In the **Gateway** field, type the IP address of the default gateway (optional).

The default gateway serves as an access point to another network.

Contact your system administrator for more information.

6 In the **MTU** field (Maximum Translation Unit), type the size of the largest packet, that your network protocol can transmit (optional).

7 In the **Domain** field, type the domain name of the system (optional).

8 In the **Server** field (under **DNS -** Domain Name System**)**, type the IP address of the DNS server (optional).

9 In the **Server** field (under **NTP -** Network Time Protocol**)**, type the IP address of the NTP server from which the system will obtain the current time (optional).

10 From the **Time Zone** list, select the wanted time zone (optional).

11 Check the **UPnP** (Universal Plug and Play) if you want to enable the support or to broadcast UPnP announcements. If the IP address of the device is unknown (forgotten or DHCP-assigned), UPnP can be used to easily identify it.

12 Click **Save** to save your general configuration data.

Wireless Server Configuration

On the **Configuration/Wireless Server** page you configure the KWS6000 to allow subscription. If the system does not allow subscription, it is not possible to subscribe a handset.

1 Click **Configuration**, and then click **Wireless Server**.

Figure 10-8 *Adm. Page WS: Configuration/Media Resource page*

2 Select the **Subscription Allowed** check box (optional).
Note: If not selected, you cannot subscribe a handset.

3 Select the **Authenticate Calls** check box (optional). If selected, authentification will be performed every time a call is established.

4 The **Encypt voice/data** field (optional) specifies if dect encryption should be used for voice calls. It can be set as disabled, enabled or enforced (calls are terminated if the handset does not support encryption).
Note: If dect encryption is enabled, the system requires base station firmware version PCS04_ or higher and it will not be possible to use repeaters on the system. Enabling encryption will additionally encrypt voice with an encryption key; a new key will be calculated for each new call.

5 Select the **Autocreate Users** check box (optional). If selected, after subscribing a handset, the system automatically will create a user for that specific handset, with the corresponding IPEI; afterwards, further details can be added to that user.

6 The **System access code** field (optional) specifies a system wide DECT access code required for subscribing handsets. The access code is from 0 to 8 decimal digits. Access codes assigned for specific users will override this setting.

7 Select the **Send date and time** check box (optional). This feature makes it possible to select whether the date/time should be visible in the handset or not.

8 The **Username** field (default - GW-DECT/admin) specifies the username required for applications to log in.

9 The **New password** field specifies the encrypted password required for applications to log in. In the **New password again** field it is required to retype the new password.

10 Select the **Enable MSF** (Message Service Function) check box (optional). It specifies if the MSF application interface (text messaging interface) is enabled and applications can connect.

11 Select the **Enable XML-RPC** check box (optional). It specifies if the XML-RPC application interface is enabled and applications can connect to the interface.

Note: Existing MSF interface will not be affected.

12 Click **Save**.

Built-In Media Resource Configuration

On the **Configuration/Media Resource** page you configure the built-in Media Resource.

1 Click **Configuration**, and then click **Media Resource**.

Figure 10-9 Adm. Page WS: Configuration/Media Resource page

2 Click the **Enabled** field, if you want to activate the built-in media resource.

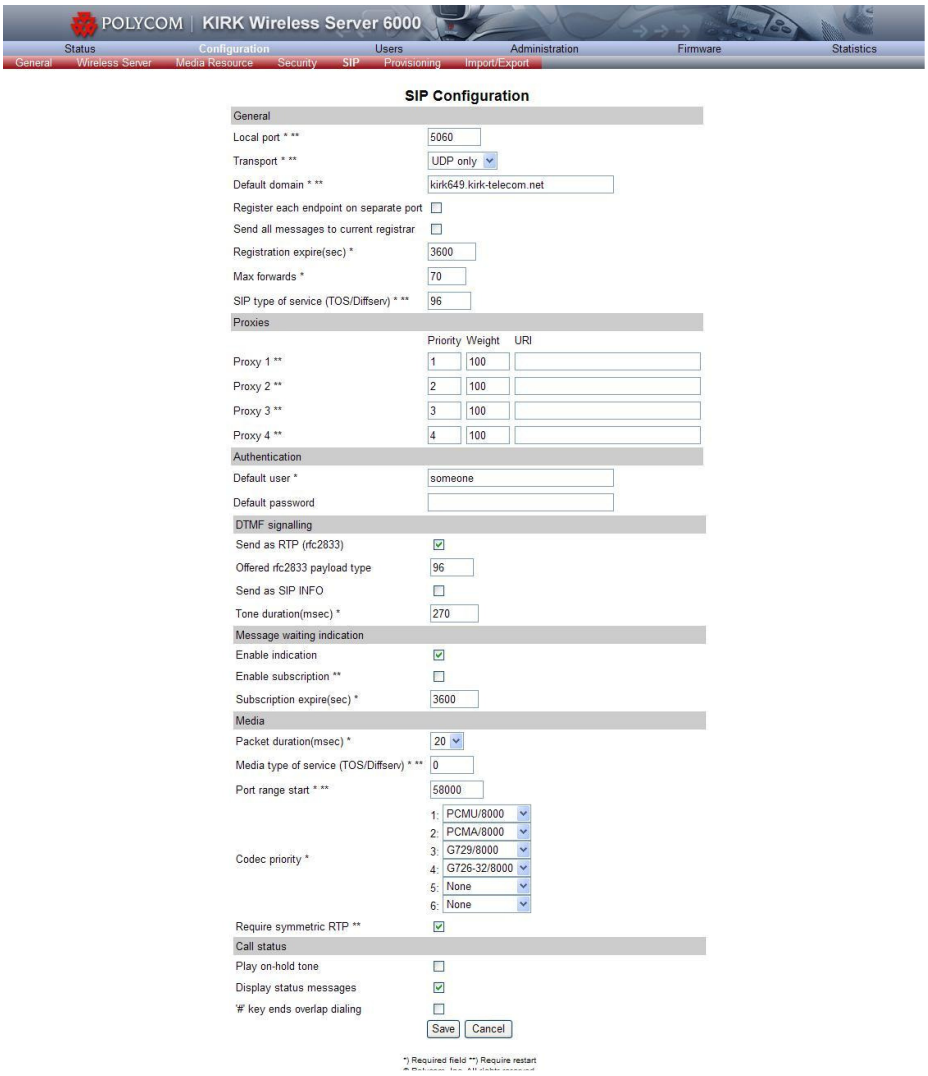
3 Click **Save**.

SIP Configuration

On the **Configuration/SIP** page you define general SIP settings, proxies, information about authentication, DTMF signalling, message waiting indication, media and call status.

1 Click **Configuration**, and then click **SIP**.

Figure 10-10 *Adm. Page WS: Configuration/SIP page*



2 In the **Local Port** field, type the local port number.
The default local port number is 5060.

Note: The local port is the port on which the KWS6000 listens for incoming SIP-signalling.

3 The **Transport** field is set by default to UDP only, alternative is DNS SRV. UDP only would be selected if SIP signalling is sent through UDP, and only simple DNS is used for resolving IP addresses. DNS SRV would be selected if SIP signalling is sent through UDP, and DNS SRV is used for solving IP addresses.

4 In the **Default Domain** field, type the name of the domain.

Note: If no user specific domain is configured, the handsets registered on the KWS6000 will use the default domain as the domain part of the SIP URI; e.g. **John Doe <sip:1234@somecompany.com>**.

5 Select **Register each endpoint on separate port** check box (optional). If enabled, it specifies that each user should use an individual UDP for its signaling; if disabled, all users should use the local port defined in the SIP configuration.

6 The **Send all messages to current registrar** check box (optional) specifies how requests outside a dialog are sent if a list of SIP servers is received via DNS SRV. If enabled, sends each request to the server currently holding the registration; if disabled, performs a DNS SRV lookup for each request and determines the destination from this.

7 In the **Registation Expire(sec)** field, type the number of seconds before a SIP registration will be renewed.
The default value is 3600.

8 In the **Max Forwards** field, type a value (optional). It refers to the maximum number of proxies or gateways jumps, maximum number of times the SIP messages can be forwarded.
The default value is 70.

9 The **SIP type of service (TOS/Diffserv)** field defines the Network Type of Service used for SIP messages.
The default value is 96.

10 In the **Proxy** field, type a SIP proxy (optional).

Note: The proxy is the SIP URI of the SIP-proxy. The KWS6000 will route all outgoing SIP signalling to the proxy, e.g. SIP registrations and outgoing calls.

Along with the firmware version PCS04_ there was added support for entering more SIP proxies for failover and load balancing. This feature is relevant in a setup with more than one SIP proxy.

11 In the **Default User** field, type the user name.

12 In the **Default Password** field, type the password (optional).

Note: If no handset specific authentication user name/password is configured, handsets registered on the KWS6000 will use the default user name/password for authentication.

13 Select the **Send as RTP (rfc2833)** check box (Real-time Transport Protocol), for the keypad signalling to be sent as RTP packets with DTMF code (optional).

14 **Offered rfc2833 payload type** is DTMF payload type.
The default value is 96.

15 Select the **Send as SIP Info** check box, if you want the keypad signalling sent as SIP INFO (optional).

Note: If DTMF send as RTP and SIP info both are selected, some IP PBX will detect each information, and accordingly the DTMF signaling twice.

16 In the **Tone Duration(msec)** field, type the time length of the tone in miliseconds.
The default value is 270.

17 Select the **Enable Indication** check box, if you want to handle MWI message (optional).

18 Select the **Enable Subscription** check box, if you want to subscribe to MWI indications from the SIP proxy (optional).

19 In the **Subscription Expire(sec)** field, type a value.
The default value is 3600.

20 From the **Packet Duration(msec)** list, select between **10**, **20** and **40**. It defines the duration of the RTP media stream packets.

21 The **Media type of service (TOS/Diffserv)** has the default value 184.

22 The **Port Range Start** is the port start range for the RTP stream.
The default value is 58000.

23 In the **Codec priority** fields, define the priorities of codecs.

24 The **Require symmetric RTP** check box defines whether the in and out RTP stream is symmetric or asymmetric.

25 The **Play on-hold tone** check box specifies if the handset should hear on-hold tone while during a call, one of the parties is put on hold.

26 Selecting the **Display status messages** check box call status messages will be displayed on the handset. .

27 **'#' key ends overlap dialing** specifies if pressing # while off hook dialing will dial the entered extension.

28 Click **Save** to save your SIP configuration data.

Security Configuration

It is possible to change the password for the unit from the **Configuration/Security** page.

1 Click **Configuration**, and then click **Security** (optional).

Figure 10-11 *Adm. Page: Configuration/Security page*

2 In the **Current password** field, type the current password.

3 In the **New username** field, type a new username.

4 In the **New password** field, type a password.

5 In the **New password again**, type the password again.

6 Select **Force secure HTTP (TLS)** for secure connections**.**

7 Click **Allow remote logging** if it should be possible to perform remote logging (Useful in case of problem solving).

8 Click **Save**.

Configuring a KIRK Wireless Server 6000 Using DHCP

This section describes how to configure a KWS6000 using DHCP.

Note It is strongly recommended to configure the KWS6000 using a static IP address.

Note If the KWS6000 is configured using DHCP, it is necessary to assign a reservation for the device on the DHCP server.

For information on accessing the web based Administration Page, refer to "Accessing the Web Based Administration Page" on page 10-3.

This section contains information about:

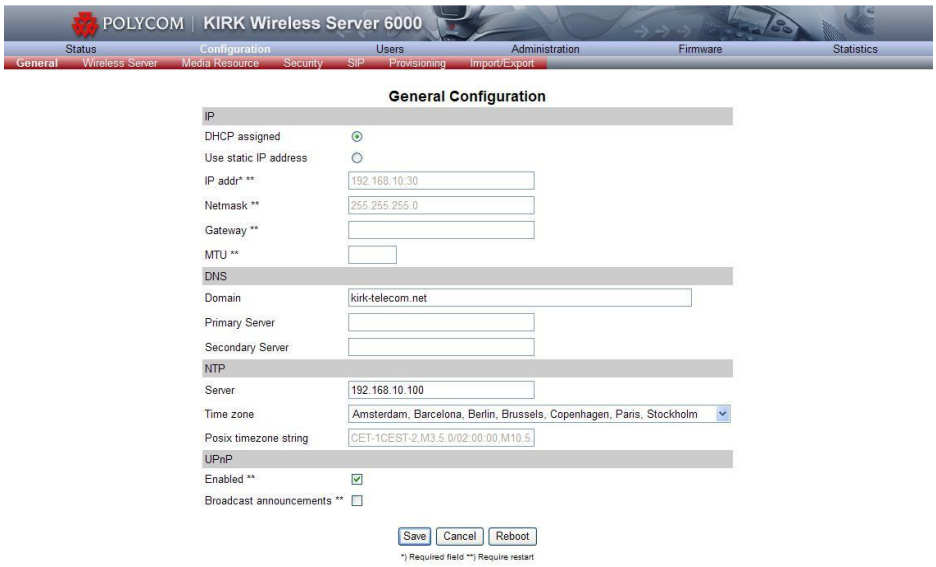
- "General Configuration" on page 10-15
- "Wireless Server Configuration" on page 10-16
- "Built-In Media Resource Configuration" on page 10-17
- "SIP Configuration" on page 10-17
- "Security Configuration" on page 10-17

General Configuration

Using DHCP the device requests and obtains an available IP address from a DHCP server. The device also obtains other parameters such as the default gateway, subnet mask, DNS server, Time server and other IP parameters from the DHCP server.

1 Click **Configuration**, and then click **General**.

Figure 10-12 Adm. Page WS: Configuration/General page



2 Click **DHCP assigned**.

3 In the **MTU** field (Maximum Transmission Unit), type the size of the largest packet, that your network protocol can transmit (optional).

4 In the **Domain** field, type the domain name of the system (optional).

5 In the **Server** field (under **DNS -** Domain Name System**)**, type the IP address of the DNS server (optional).

6 In the **Server** field (under **NTP -** Network Time Protocol**)**, type the IP address of the NTP server from which the system will obtain the current time (optional).

7 From the **Time Zone** list, select the wanted time zone (optional).

8 Check the **UPnP** (Universal Plug and Play) if you want to enable the support or to broadcast UPnP announcements.

9 Click **Save** to save your general configuration data.

Wireless Server Configuration

On the **Configuration/Wireless Server** page you configure the KWS6000 to allow subscription. If the system does not allow subscription, it is not possible to subscribe a handset.

Refer to "Wireless Server Configuration" on page 10-9 for more information.

Built-In Media Resource Configuration

On the **Configuration/Media Resource** page you configure the built-in Media Resource.

Refer to "Built-In Media Resource Configuration" on page 10-10 for more information.

SIP Configuration

On the **Configuration/SIP** page you define general SIP settings, information about authentication, DTMF signalling, message waiting indication and media.

Refer to "SIP Configuration" on page 10-11 for more information.

Security Configuration

It is possible to change the password for the unit from the **Configuration/Security** page.

Refer to "Security Configuration" on page 10-14 for more information.

Checking Indicators

- Verify that the KWS6000/media resource LED indicator is continuously on, indicating that the KWS6000/media resource is functional.

Note The LED will not be on before the base stations are configured.

Making a Back-Up of the Configuration File

For more information, refer to "Making a Back-Up of the Configuration File" on page 15-13.

11

Configuring KIRK Media Resources

This section provides you with information on how to power up the media resource and connect the unit to a computer. It also provides information on how to configure a media resource through the web based Administration Page using either DHCP or static IP address.

Note The media resource is pre-configured to use DHCP. It is recommended to configure the media resource using DHCP.

This section includes information about:

- "Powering up the KIRK Media Resource" on page 11-1
- "Connecting a Computer to the KIRK Media Resource" on page 11-2
- "Accessing the Web Based Administration Page" on page 11-3
- "Configuring a KIRK Media Resource Using DHCP" on page 11-6
- "Configuring a KIRK Media Resource Using Static IP Address" on page 11-7
- "Checking Indicators" on page 11-7
- "Making a Back-Up of the Configuration File" on page 11-8

Powering up the KIRK Media Resource

After installing the media resources you need to power up the unit using:

- Local Power Supply

  Power options for the KWS6000 is 48VDC, 1 W maximum when using local power supply.

Local Power Supply

Powering the media resource with a local power supply can be done using the power input on the unit.

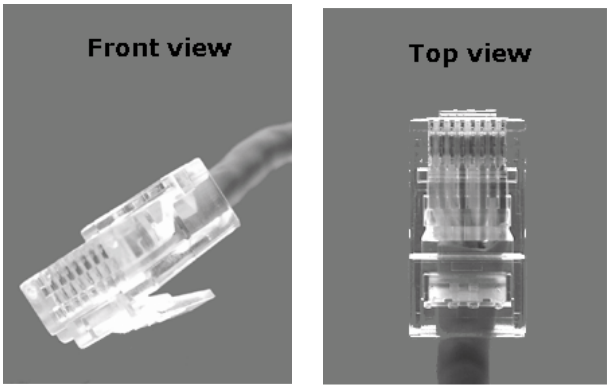
Note The power supply for the media resource is to be ordered separately (Part no. EU, UK and US version: 84642468).

Connecting a Computer to the KIRK Media Resource

The media resource communicates with the computer through a cross-over patch cable.

Note The LAN port of the media resource is a RJ45 connector.

Figure 11-1 *Cross-Over Patch Cable (RJ45)*



1 Connect the cross-over patch cable to the computer.

2 Connect the cross-over patch cable to the **ETH** port of the media resource.

Accessing the Web Based Administration Page

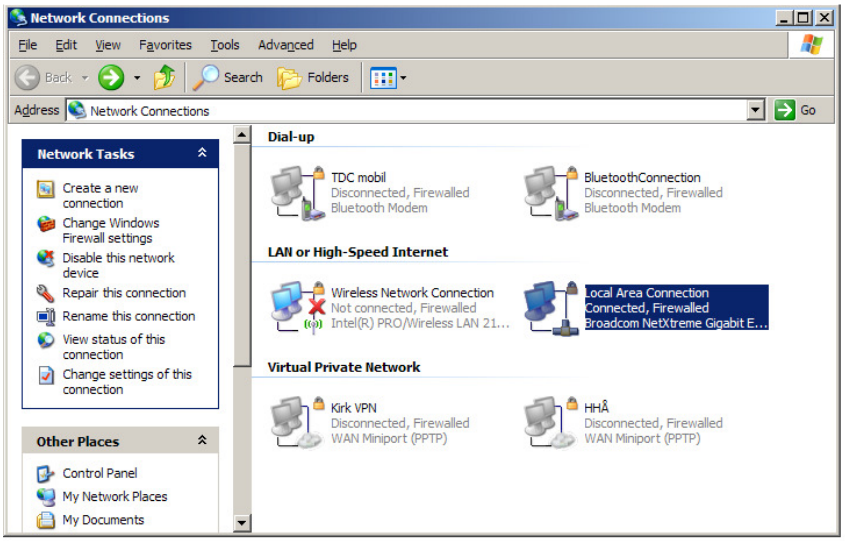
In order for your computer to communicate with the KWS6000 it is necessary to change the computer's Internet Protocol Properties to have an IP address on the same subnet as the KWS6000.
Below is shown an example on an IP address on the same subnet as the Media Resource default IP address:

- IP address: **192.168.0.2**
- Sub-net mask: **255.255.255.0**

How to Change Internet Protocol Properties using Windows XP

1 From the Start menu, point to **Connect to** and then click **Show all connections**.

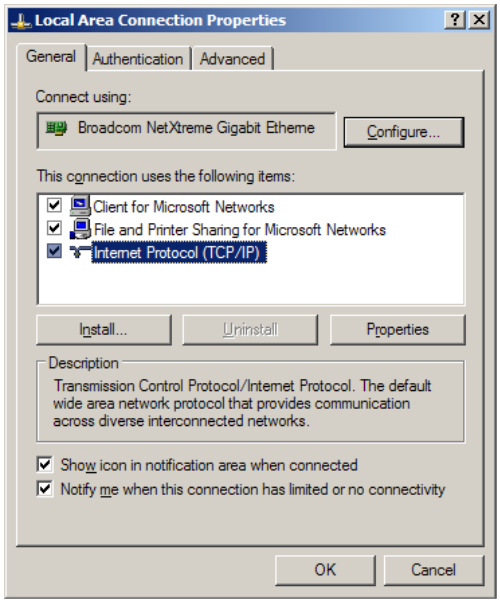
A **Network Connections** window appears.



2 Under **Lan or High-Speed Internet**, right-click on **Local Area Connection** and click **Properties**.

A **Local Area Connection Properties** dialog box appears.

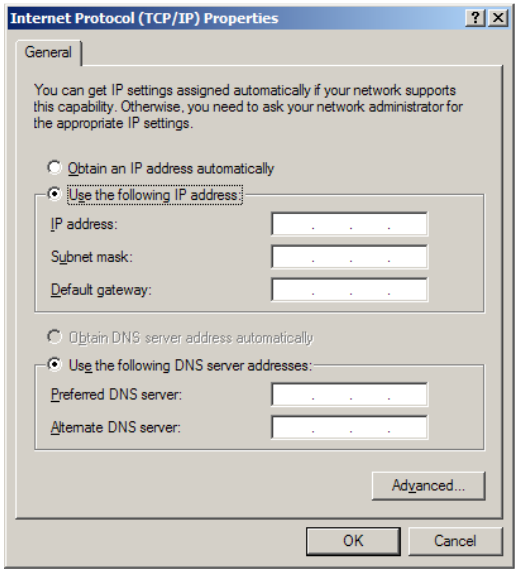
Figure 11-2 *Local Area Connection Properties dialog box*



3 In the **General** tab, select **Internet Protocol (TCP/IP)**, and then click **Properties**.

An **Internet Protocol (TCP/IP) Properties** dialog box appears.

Figure 11-3 *Internet Protocol Properties dialog box*


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

4 Click **Use the following IP address**, and then type **192.168.0.2** in the **IP address** field.

5 In the **Subnet mask** field, type **255.255.255.0**.

6 Click **OK**.

You can now reach the media resource using a standard web browser.

How to Access the Administration Page

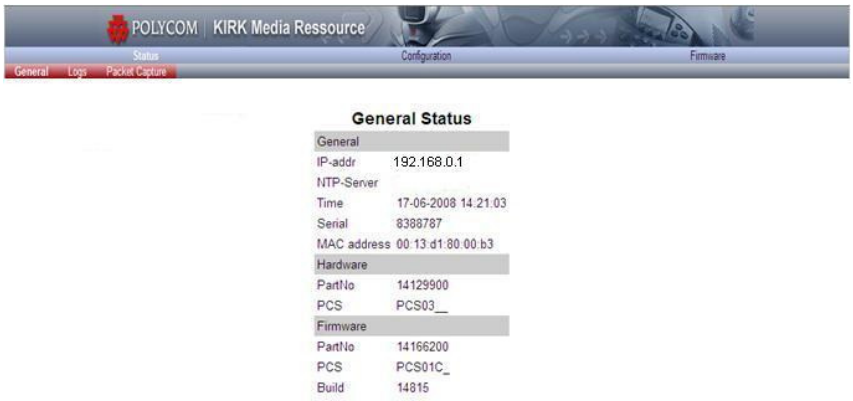
The web based Administration Page is accessed through a standard web browser.

1 Open a web browser.

2 In the browsers **Address** bar, type **http://192.168.0.1**, and then press **ENTER**.

The KWS6000 Administration Page appears.

Figure 11-4 *Main page of the Administration Page for media resource*



Entering a System User Name and Password

First time you access the Administration Page, you need to log on with user name and a password.

Note

The default user name of the system is **admin** and the default password of the system is **ip6000**. It is strongly recommeded to change the password, refer to "Changing System User Name and Password" on page 15-20.

Figure 11-5 Adm. Page: Enter Network Password dialog box

1 In the **User Name** field, type **admin**.

2 In the **Password** field, type **ip6000**.

3 Click **OK**.

Configuring a KIRK Media Resource Using DHCP

This section describes how to configure a media resource using DHCP.

Note It is recommended to configure the media resource using DHCP. The media resource is pre-configured to use DHCP.

If the KWS6000 is configured using a static IP address, it is possible to assign options to the DHCP server making it extremely easy to configure all media resources. For more information about assigning options to the DHCP server, refer to "Assigning DHCP Server Options" on page 9-2.

Note When assigning options to the DHCP server you do not need to configure the media resource through the Administration Page of the media resource. Just connect the media resource to the network.

Configuring a KIRK Media Resource Using Static IP Address

This section describes how to configure a media resource using static IP address.

This section contains information about:

- "General Configuration" on page 11-7
- "Media Resource Configuration" on page 11-7

General Configuration

On the **Configuration/General** page you define IP, DNS and NTP settings for the media resource.

Refer to "General Configuration" on page 10-8 for a description.

Media Resource Configuration

On the **Configuration/Media Resource** page you configure the media resource.

1 Click **Configuration**, and then click **Media Resource**.

Figure 11-6 Adm. Page Media Resource: Config./Media Resource page

2 In the **Host** field, type the address of the wireless server.

3 Click **Save**.

Checking Indicators

- Verify that the media resource LED indicator is continuously on, indicating that the media resource is functional.

Note The LED will not be on before the base stations are configured.

12

Configuring KIRK Base Station

This section provides you with information on how to connect the base station to a KWS6000 and how to configure the base station through the web based Administration Page using either DHCP or static IP address.

Note The base station is pre-configured to use DHCP. It is strongly recommended to configure the base station using DHCP.

This section includes information about:

- "Powering up the KIRK Base Station" on page 12-1
- "Connecting a Computer to the KIRK Base Station" on page 12-2
- "Accessing the Web Based Administration Page" on page 12-3
- "Configuring a KIRK Base Station Using DHCP" on page 12-6
- "Configuring a KIRK Base Station Using Static IP Address" on page 12-9
- "Checking Indicators" on page 12-11
- "Making a Back-Up of the Configuration File" on page 12-11

Powering up the KIRK Base Station

After installing the base station you need to power it up. The base station uses:

- Power over Ethernet (PoE 802.3af).
- Maximum power supply consumption is 3.0W (IEEE 802.3af class 1 device).

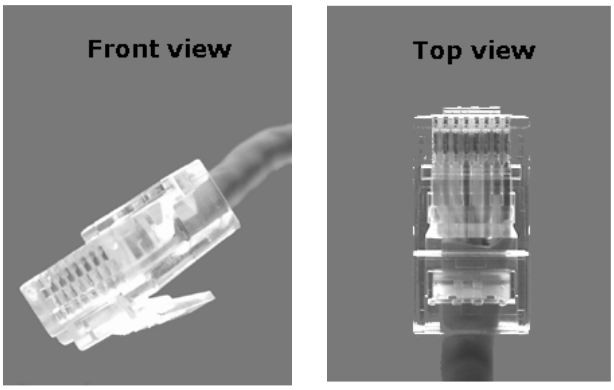
Use a standard PoE adapter or a PoE-enabled port on a switch adhering to PoE 802.3af when connecting the base station to a PoE power source.

Connecting a Computer to the KIRK Base Station

The base station communicates with the computer either through a cross-over patch cable or through a network with identical net mask, e.g. the IP address: 192.168.0.2 and Sub-net mask: 255.255.255.0.

Note The LAN port of the base station is a RJ45 connector.

Figure 12-1 *Cross-Over Patch Cable (RJ45)*



1 Connect the LAN cable or cross-over patch cable to the computer.

2 Connect the LAN cable or cross-over patch cable to the ethernet connector at the bottom of the base station.

Accessing the Web Based Administration Page

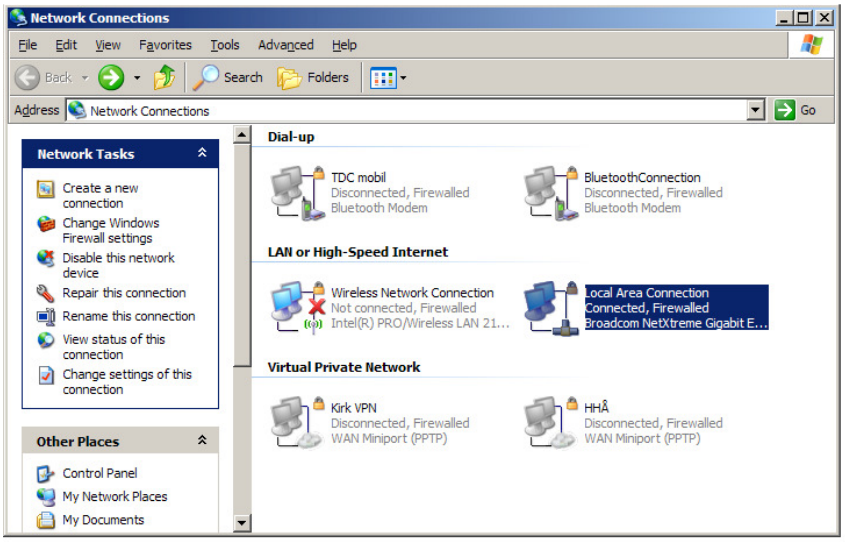
In order for your computer to communicate with the KWS6000 it is necessary to change the computer's Internet Protocol Properties to have an IP address on the same subnet as the KWS6000.
Below is shown an example on an IP address on the same subnet as the base station default IP address:

- IP address: **192.168.0.2**
- Sub-net mask: **255.255.255.0**

How to Change Internet Protocol Properties using Windows XP

1 From the Start menu, point to **Connect to** and then click **Show all connections**.

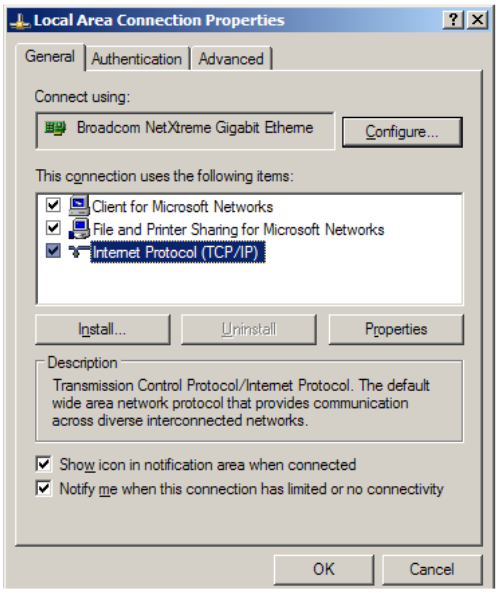
A **Network Connections** window appears.



2 Under **Lan or High-Speed Internet**, right-click on **Local Area Connection** and click **Properties**.

A **Local Area Connection Properties** dialog box appears.

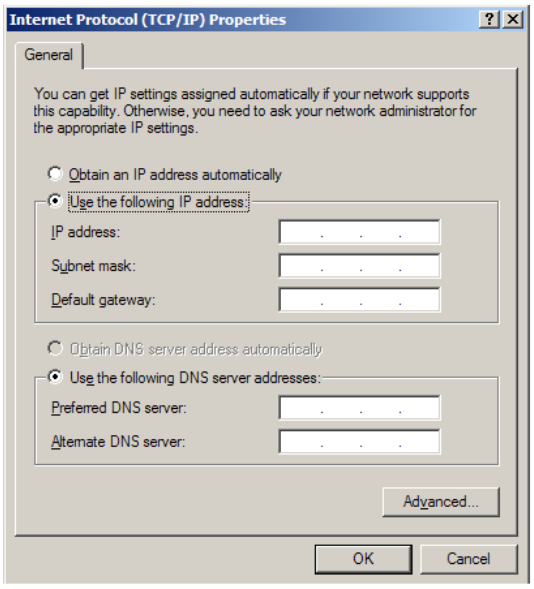
Figure 12-2 *Local Area Connection Properties dialog box*



3 In the **General** tab, select **Internet Protocol (TCP/IP)**, and then click **Properties**.

An **Internet Protocol (TCP/IP) Properties** dialog box appears.

Figure 12-3 *Internet Protocol Properties dialog box*


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

4 Click **Use the following IP address**, and then type **192.168.0.2** in the **IP address** field.

5 In the **Subnet mask** field, type **255.255.255.0**.

6 Click **OK**.

You can now reach the base station using a standard web browser.

How to Access the Administration Page

The web based Administration Page is accessed through a standard web browser.

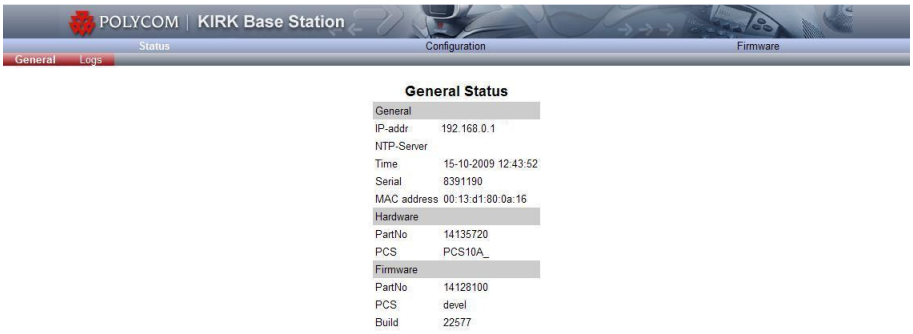
1 Open a web browser.

2 In the browsers **Address** bar, type **http://192.168.0.1**, and then press **ENTER**.

Note: The base station is pre-configured with the IP address: 192.168.0.1 through the ETH port.

The Administration Page for the base station appears.

Figure 12-4 Main page of the Administration Page for base station



Entering a System User Name and Password

First time you access the Administration Page, you need to log on with user name and a password.

Note

The default user name of the system is **admin** and the default password of the system is **ip6000**. It is strongly recommended to change the password, refer to "Changing System User Name and Password" on page 15-26.

Figure 12-5 Adm. Page: Enter Network Password dialog box

1 In the **User Name** field, type **admin**.

2 In the **Password** field, type **ip6000**.

3 Click **OK**.

Configuring a KIRK Base Station Using DHCP

This section describes how to configure a base station using DHCP.

Note It is strongly recommended to configure the base station using DHCP. The base station is pre-configured to use DHCP.

If the KWS6000 is configured using a static IP address, it is possible to assign options to the DHCP server making it extremely easy to configure all base stations. For more information about assigning options to the DHCP server, refer to "Assigning DHCP Server Options" on page 9-2.

For information on accessing the web based Administration Page, refer to "Accessing the Web Based Administration Page" on page 12-3.

This section contains information about:

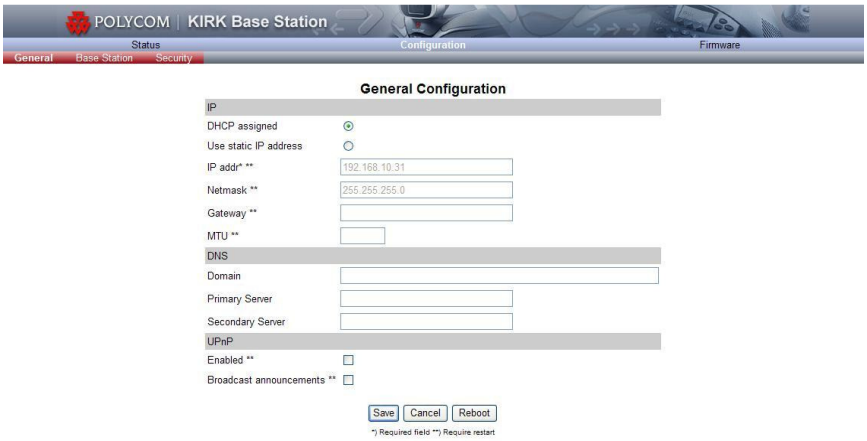
- "General Configuration" on page 12-7
- "Security Configuration" on page 12-7
- "Sync. Ways Configuration" on page 12-8

General Configuration

On the **General Configuration** page you define DNS settings for the base station.

1 Click **Configuration**, and then click **General**.

Figure 12-6 *Adm. Page Base Station: Configuration/General page*



2 Click **DHCP assigned**.

3 In the **MTU** field (Maximum Translation Unit), type the size of the largest packet, that your network protocol can transmit (optional).

4 In the **Domain** field, type the domain name of the system (optional).

5 In the **Server** field (under **DNS -** Domain Name System**)**, type the IP or to broadcast UPnP announcements.

6 Check the **UPnP** (Universal Plug and Play) if you want to enable the support address of the domain name (optional).

Security Configuration

It is possible to change the password for the unit.

1 Click **Configuration**, and then click **Security** (optional).

Figure 12-7 *Adm. Page Base Station: Configuration/Security page*

2 In the **Current password** field, type the current password.

3 In the **New username** field, type a new username.

4 In the **New password** field, type a password.

5 In the **New password again**, type the password again.

6 Select **Force secure HTTP (TLS)** for secure connections**.**

7 Click **Allow remote logging** if it should be possible to log on to the system remotely (Useful in case of troubleshooting).

8 Click **Save**.

Sync. Ways Configuration

It is necessary to define the synchronization ways of the base station.

1 To define the sync. ways of the base station, open the Administration Page for the KWS6000.

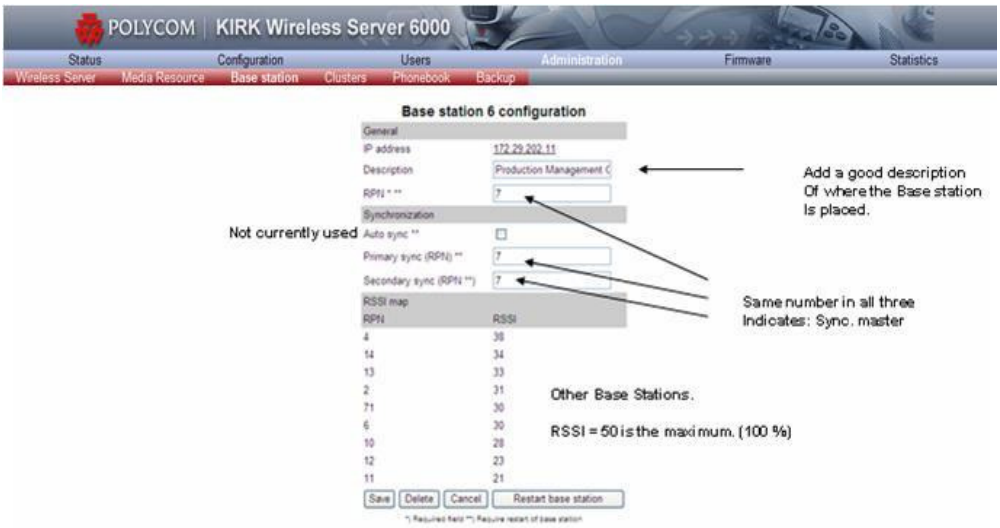
2 Click **Administration**, and then click **Base Station**.

Figure 12-8 Adm. Page WS:Administration/Base station page

POLYCOM | KIRK Wireless Server 6000
Status
Configuration
Users
Administration
Firmware
Statistics
Wireless Server
Media Resource
Base station
Active Calls
Abnormal releases
Traffic Distribution
Base stations
No
Description
RPN
Status
Times busy
Active now
Active max.
Overall
0 OEM Sales Department ny hw 13 connected 0 0 1 8
2 Stock Office 8 not connected 0 0 0 0
3 Marketing Department 11 connected 0 0 1 4
5 R&D Department Room No. 1 10 connected 0 0 1 8
6 Production Management Office 7 connected 0 0 2 20
7 R&D Department Room No. 8 2 connected 0 0 1 8
8 R&D Technical Director Office 12 not connected 0 0 0 0
9 Production Meeting Room 6 connected 0 0 1 7
10 Meeting Room No. 5 5 not connected 0 0 0 0
11 Grædemur 1 not connected 0 0 0 0
13 Service Department ny hw 3 connected 0 0 1 5
14 Meeting Room No. 8 ny hw 4 connected 0 0 1 7
15 HR Printer ny hw 14 connected 0 0 1 8

3 Double-click on the relevant base station in the list.

Figure 12-9 Adm. Page WS:Administration/Base station page



4 In the **RPN** field (Radio Part Number), type the radio part number of the base station.

The radio ID can be a number between 0 and 255. See your site planner.

Note: The default value of the RPN is equal to the base station number. It is strongly recommended not to change this value.

5 It is possible to select **Auto sync** if you are deploying and want to find a sync way for the first base station.

Note: **Auto sync** is only to be used in a deployment situation. When selecting **Auto sync**, radio part numbers in the **Primary sync. (RPN)** field and **Secondary sync. (RPN)** field are not taken into consideration.

6 In the **Primary sync. (RPN)** field, type the radio part number of the base station, you want to synchronize on. See your site planner.

7 In the **Secondary sync. (RPN)** field, type the radio part number of the base station, you want to synchronize on. See your site planner.

8 Click **Save**.

To check the sync state of the base station, refer to "Sync State of Base Station" on page 15-29.

Configuring a KIRK Base Station Using Static IP Address

This section describes how to configure a base station using static IP address. For information on accessing the web based Administration Page, refer to "Accessing the Web Based Administration Page" on page 12-3.

This section contains information about:

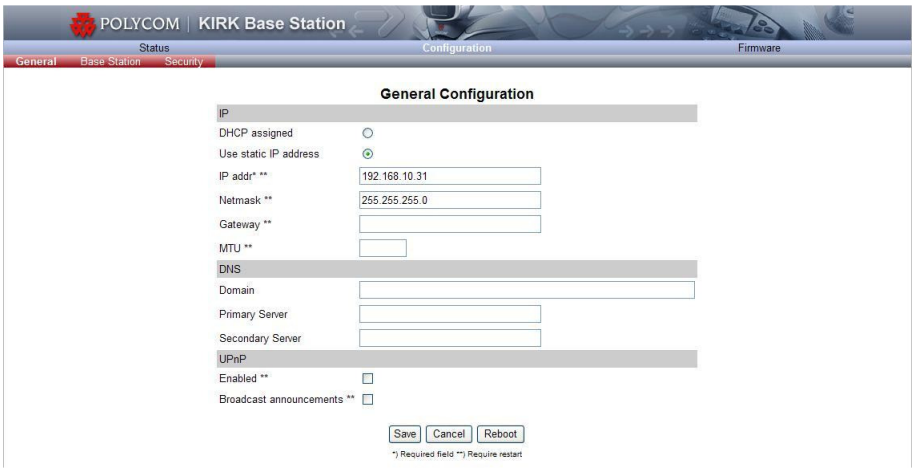
- "General Configuration" on page 12-10
- "Base Station Configuration" on page 12-11
- "Security Configuration" on page 12-11
- "Sync. Ways Configuration" on page 12-11

General Configuration

On the **General Configuration** page you define IP and DNS settings for the base station.

1 Click **Configuration**, and then click **General**.

Figure 12-10 *Adm. Page Base Station: Configuration/General page*



2 Click **Use static IP address**.

3 In the **IP addr** field, type the IP address of the base station.

4 In the **Netmask** field, type **255.255.255.0**.

5 In the **Gateway** field, type IP address of the default gateway (optional). The default gateway serves as an access point to another network. Contact your system administrator for more information.

6 In the **MTU** field (Maximum Translation Unit), type the size of the largest packet, that your network protocol can transmit (optional).

7 In the **Domain** field, type the domain name of the system (optional).

8 In the **Server** field (under **DNS -** Domain Name System**)**, type the IP address of the domain name (optional).

9 Check the **UPnP** (Universal Plug and Play) if you want to enable the support or to broadcast UPnP announcements.

Base Station Configuration

How to configure the base station:

1 Click **Configuration**, and then click **Base station**.

Figure 12-11 Adm. Page Base Station: Configuration/Base station page

2 In the **Host** field, type the host name of the KWS6000.

3 Click **Save**.

4 Click **Reboot** to enable the configuration changes.

Security Configuration

It is possible to change the password for the unit.

Refer to "Security Configuration" on page 12-7 for more information.

Sync. Ways Configuration

It is necessary to configure the sync. ways of the base station.

Refer to "Sync. Ways Configuration" on page 12-8 for more information.

Checking Indicators

- Verify that the base station LED indicator is continuously on, indicating that the base station is functional.

Making a Back-Up of the Configuration File

For more information, refer to "Making a Back-Up of the Configuration File" on page 15-13.

13

KIRK Handset Registration and Subscription

This section provides information about handset registration and subscription. You must register and subscribe a handset before you can use it.

Note

This section only describes how to register handsets on the KWS6000. You also need to register the users on the call handler. For registering users on the call handler, refer to the call handler user guide.

When registering handsets you enter information about the handsets settings (such as; the handsets serial number (IPEI), name etc.) in the system database. When subscribing handsets you subscribe a registered handset to the system for usage. If the handset is not registered in the system database, subscription of the handset is not possible.

This section includes information about:

- "Registrering KIRK Handsets" on page 13-1
- "Subscribing KIRK Handsets" on page 13-3

Registering KIRK Handsets

To register handsets you use the web based Administration Page of the KWS6000.

Each handset in the wireless solution must be programmed with the serial number (IPEI) before it can operate. This serial number must be registered in the web based Administration Page of the KWS6000. Serial numbers are a unique fingerprint of each handset. The serial number is programmed into the handset during the manufacturing process and cannot be changed by field personnel.

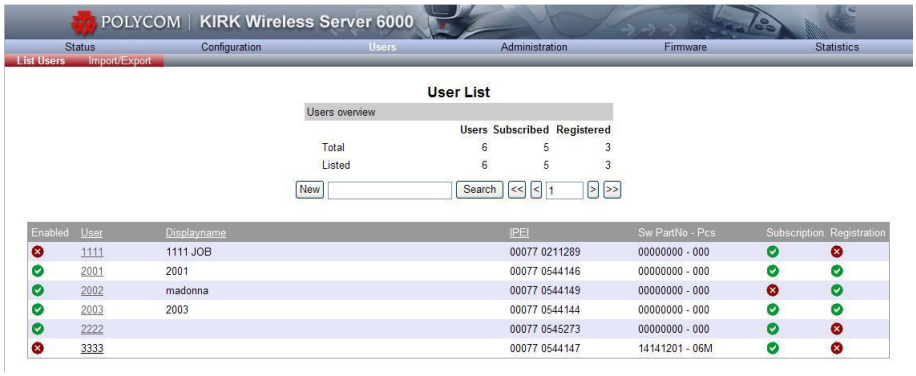
Note

The KWS6000 does not provide any service to a handset whose serial number is not registered in the web based Administration Page.

For more information about accessing the Administration Page, see "Accessing the Web Based Administration Page" on page 10-3.

1 Click **Configuration** and then click **List Users**.

Figure 13-1 *Adm. Page WS: Users/List Users page*



2 Click **New**.

Figure 13-2 *Adm. Page WS: Users/List Users/Users page*

The data configured for each handset can be split into two categories. DECT data which is necessary for the correct handling of the DECT protocol stack. SIP data which is necessary for the handling of a SIP user agent.

3 In the **IPEI** field, type the IPEI number (serial number) of the handset. The serial number consist of a five-digit handset type (manufacturer code) and a seven-digit handset number.

For more general information about the IPEI number (serial number) and how to retrieve it, refer to "Retrieving the Serial Number of the KIRK Handset" on page 8-12.

4 In the **Access code** field, type the authentication code (AC) (optional)

The authentication code is a subscription password of a maximum of eight digits, defined by the technicians, and can be used when connecting the handset to a KWS6000. The authentication code is a subscription pin code for the individual handset.

5 In the **Standby text** field, type a text to be displayed when the handset is on hook (optional).

6 In the **Username** field, type the user part of a SIP URI, e.g. 1234 in John Doe<sip:**1234**@somecompany.com>.

7 In the **Domain** field, type the domain part of a SIP URI, e.g. somecompany.com in John Doe<sip:1234@**somecompany.com**> (optional).

Note: If not configured, the default domain will be used.

8 In the **Display name** field, type the name to be displayed (caller ID), e.g. John Doe in **John Doe**<sip:1234@somecompany.com> (optional).

9 In the **Authentication user** field, type a user name (optional).

10 The user name will override the **Default User** field under SIP Configuration (refer to "SIP Configuration" on page 10-11).

11 In the **Authentication password** field, type a password (optional).

The password will override the **Default Password** field under SIP Configuration (refer to "SIP Configuration" on page 10-11).

12 Select the **Disabled** check box if you want to disable the user you are editing.

13 Click **Save** to save the registration(s).

Subscribing KIRK Handsets

KIRK 3040 Handset

A handset can be subscribed to more systems and will automatically log on to the relevant system. If a handset is subscribed to two or more systems, you can use Auto Login type A to change between the systems automatically.
When to use Auto Login type A:

- Auto Login A should only be used in separate systems without overlaps.

  If a handset loses signal from the system (the display showing Out of Range), then after 20 seconds the handset will start searching for an alternative system available from the Login list and automatically change to this system.

  Note: Using Auto Login A any call will be dropped when changing to an alternative system.

This section provides information about:

- "Subscribing Handsets" on page 13-5
- "Subscribing a Handset to Different Systems" on page 13-5

Note

Using Auto Login A any call will be dropped when changing to an alternative system. Subscription of handsets requires the use of each registered handset.

Note

To make subscriptions, the system must allow subscriptions to be made (refer to "Wireless Server Configuration" on page 10-9). Some systems also require an Authentication Code (AC). If more than one system currently permits subscription, you will need to know the ID of the system (ARI code) to which you wish to subscribe. Authentication Codes and system ID's (ARI codes) will be provided by the system administrator.

Before subscribing handsets you need to ensure:

- that handset battery has been charged ("Charging Battery" on page 8-9). Low battery could cause subscription problems.
- that the handsets have been registered to the system ("Registering KIRK Handsets" on page 13-1).

Subscribing Handsets

1 Press **MENU** - go to **MENU LOGIN**.

2 Press 3 - go to **SUBSCRIPTION CREATE** to subscribe to a system.

3 Press 3. The handset searches for the serial number of the system.

4 Use the **< >** keys to scroll between the IDs systems if there is more than one system available.

5 During subscription, the handset searches for free positions and performs subscription on the first free position.

As soon as the correct serial number of the system appears in the display, press 3.

The serial number is located on the label on the rear of the KWS6000.

6 Enter the AC (if required) using the keyboard, and press 3.

An antenna symbol appears on the display to indicate a successful subscription. If not, the subscription has failed and the procedure must be retried.

Subscribing a Handset to Different Systems

The handset can be subscribed (connected) to a maximum of 10 different systems.

Note To be able to log on to a system, subscription to the system must be established.

Changing to another System Automatically Using Auto Login A

Note Auto Login A should only be used when systems are separate, with no overlaps.

1 Press **MENU** - go to **MENU LOGIN**.

2 Press 3 - go to **SELECT LOGIN**.

3 Press 3 - go to **SELECT LOGIN AUTO A**.

4 Press 3.

The handset automatically selects a system.

The selected system is marked with an **A**.

Changing to another System Manually

If you would like to change to another system:

1 Press **MENU** - go to **MENU LOGIN**.

2 Press 3 - go to **SELECT LOGIN** to subscribe to a system.

The actual chosen system is marked with an * or an **A** (if auto login is selected).

3 Press 3 - use the < > keys to scroll between the IDs of the different systems to find the system to which you want to connect.

Under **SELECT LOGIN** only subscriptions display. Free positions do not display.

4 Press 3 to confirm.

KIRK 4020/4040/4080 Handset

A handset can be subscribed to more systems and will automatically log on to the relevant system. If a handset is subscribed to two or more systems, you can use Auto Login type A to change between the systems automatically. If a handset is subscribed to two systems only, you can use Auto Login type B to change between the systems automatically.

When to use Auto Login type A:

- Auto Login A should only be used in separate systems without overlaps.

  If a handset loses signal from the system (the display showing Out of Range), then after 20 seconds the handset will start searching for an alternative system available from the Login list and automatically change to this system.

  Note: Using Auto Login A any call will be dropped when changing to an alternative system.

When to use Auto Login type B:

- Auto Login B can be used in separate systems which are overlapping each other.

  As soon as the handset has measured a low RSSI signal 5 times in succession, it will start up the Auto Login type B procedure and change to an alternative system available.

  Note: Using Auto Login B any call will be dropped when changing to an alternative system.

In some situations it is necessary to use Auto Login type B due to the following:

– If two separate systems are sharing areas with common overlap, selecting Auto Login type A will result in poor performance as the handset will stay connected to the actual system it is subscribed to for as long as it can recognize a signal. Even if the bearer quality of the actual system is so bad that it cannot setup a connection, it is still not possible for the handset to change to alternative systems. Auto Login type B can enhance the performance for such configurations. Using Auto Login type B the handset is forced to switch from a system with bad bearer quality to one of the alternative systems available.

  To determine if it is necessary to log on to another system the handset is measuring the RSSI level. A number of measured low RSSI levels will force the handset to log on to the alternative system.

This section provides information about:

- "Subscribing Handsets" on page 13-8
- "Subscribing a Handset to Different Systems" on page 13-8

Note Subscription of handsets requires the use of each registered handset.

Note To make subscriptions, the system must allow subscriptions to be made (refer to "Wireless Server Configuration" on page 10-9). Some systems also require an Authentication Code (AC). If more than one system currently permits subscription, you will need to know the ID of the system (ARI code) to which you wish to subscribe. Authentication Codes and system ID's (ARI codes) will be provided by the system administrator.

Before subscribing handsets you need to ensure:

- that handset battery has been charged ("Charging Battery" on page 8-9). Low battery could cause subscription problems.
- that the handsets have been registered to the system ("Registering KIRK Handsets" on page 13-1).

Subscribing Handsets

1 Press **MENU** - go to **MENU LOGIN**.

2 Press 3 - go to **SUBSCRIPTION CREATE** to subscribe to a system.

3 Press 3. The handset searches for the serial number of the system.

4 Use the **< >** keys to scroll between the IDs systems if there is more than one system available.

During subscription, the handset searches for free positions and performs subscription on the first free position.

5 As soon as the correct serial number of the system appears in the display, press 3.

The serial number is located on the label on the rear of the KWS6000.

6 Enter the AC (if required) using the keyboard, and press 3.

An antenna symbol appears on the display to indicate a successful subscription. If not, the subscription has failed and the procedure must be retried.

Subscribing a Handset to Different Systems

The handset can be subscribed (connected) to a maximum of 10 different systems.

Note To be able to log on to a system, subscription to the system must be established.

Changing to another System Automatically Using Auto Login A

Note Auto Login A should only be used when systems are separate, with no overlaps.

1 Press **MENU** - go to **MENU LOGIN**.

2 Press 3 - go to **SELECT LOGIN**.

3 Press 3 - go to **SELECT LOGIN AUTO A**.

4 Press 3.

The handset automatically selects a system.

The selected system is marked with an **A**.

Changing to another System Automatically Using Auto Login B

Note Auto Login B can be used in separate systems which are overlapping each other.

1 Press **MENU** – go to **MENU LOGIN**.

2 Press 3 – go to **SELECT LOGIN**.

3 Press 3 – go to **SELECT LOGIN AUTO B**.

4 Press 3.

The handset automatically selects a system.

The selected system is marked with a **B**.

Changing to another System Manually

If you would like to change to another system:

1 Press **MENU** - go to **MENU LOGIN**.

2 Press 3 - go to **SELECT LOGIN** to subscribe to a system.

The actual chosen system is marked with an * or an **A** (if auto login is selected).

3 Press 3 - use the < > keys to scroll between the IDs of the different systems to find the system to which you want to connect.

Under **SELECT LOGIN** only subscriptions display. Free positions do not display.

4 Press 3 to confirm.

KIRK 5020/5040 Handset

A handset can be subscribed to more systems and will automatically log on to the relevant system. If a handset is subscribed to two or more systems, you can use Auto Login type A to change between the systems automatically.

When to use Auto Login type A:

- Auto Login A should only be used in separate systems without overlaps.

  If a handset loses signal from the system (the display showing a no signal icon), then after 20 seconds the handset will start searching for an alternative system available from the Login list and automatically change to this system.

  Note: Using Auto Login A any call will be dropped when changing to an alternative system.

This section provides information about:

- "Creating Login (Subscribing Handset)" on page 13-10
- "Subscribing a Handset to Different Systems" on page 13-11

Note Subscription of handsets requires the use of each registered handset.

Note To make subscriptions, the system must allow subscriptions to be made (refer to "Wireless Server Configuration" on page 10-9). Some systems also require an Authentication Code (AC). If more than one system currently permits subscription, you will need to know the ID of the system (ARI code) to which you wish to subscribe. Authentication Codes and system ID's (ARI codes) will be provided by the system administrator.

Before subscribing handsets you need to ensure:

- that handset battery has been charged ("Charging Battery" on page 8-9). Low battery could cause subscription problems.
- that the handsets have been registered to the system ("Registering KIRK Handsets" on page 13-1).

Creating Login (Subscribing Handset)

To create a login, the system must allow subscriptions to be made. Some systems also require an Authentication Code (AC). If more than one system currently permits subscription, you will need to know the ID of the system to which you want to subscribe. Authentication Codes and system ID's will be provided be the system administrator.

You can subscribe up to 10 systems (create 10 logins).

1. Press **Menu** to enter main menu.
2. Scroll to **Settings** and press **Select**.
3. Scroll to **Advanced** and press **Select**.
4. Scroll to **Login** and press **Select**.
5. Scroll to **Create login** and press **Select**. The handset will start searching for a system.
6. Scroll to the found system and press **Select**.
7. Enter an AC Code and press **Ok** to connect to the system.
8. Press **Ok**.

Subscribing a Handset to Different Systems

The handset can be subscribed (connected) to a maximum of 10 different systems.

Note To be able to log on to a system, subscription to the system must be established.

Changing to another System Automatically Using Auto Login A

Note Auto Login A should only be used when systems are separate, with no overlaps.

Note To activate Auto login your handset must be subscribed to at least two systems.

1. Press **Menu** to enter main menu.
2. Scroll to **Settings** and press **Select**.
3. Scroll to **Advanced** and press **Select**.
4. Scroll to **Login** and press **Select**.
5. Scroll to **Auto login** and press **Select**.
6. If **Off** is selected, press **Change** to select **On**.
7. Press **R** to return to standby mode.

   The handset automatically selects a system.

   The selected system is marked with an **A**.

Changing to another System Manually

If you would like to change to another system:

1. Press **Menu** to enter main menu.
2. Scroll to **Settings** and press **Select**.
3. Scroll to **Advanced** and press **Select**.
4. Scroll to **Login** and press **Select**.
5. Scroll to **Select login** and press **Select**.
6. Scroll to the desired login and press **Select**.

14

KIRK Handset Management

This section provides information about handset management such as viewing handset configuration, deregistering handsets and changing user configurations using the web based Administration Page. It also provides information about unsubscribing handsets, exporting/restoring/importing handset registration data and handset adjustment.

For more information about accessing the Administration Page, refer to "Accessing the Web Based Administration Page" on page 10-3.

This section includes information about:

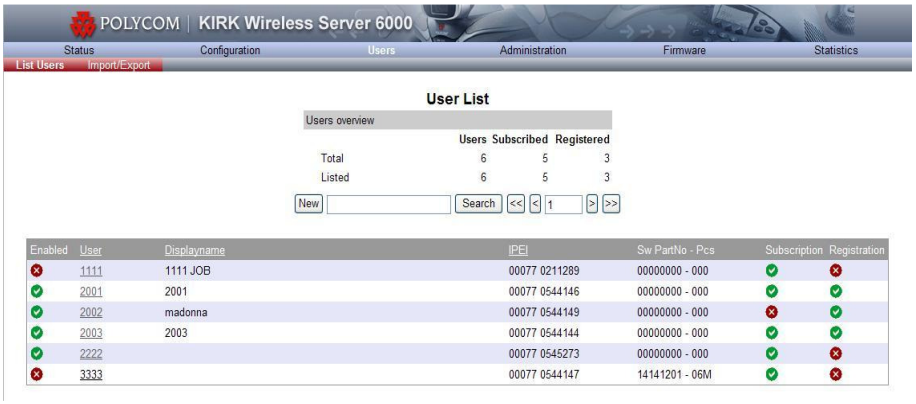
- "Viewing Handset/User Configuration" on page 14-2
- "Searching for Handset/User Information" on page 14-2
- "Unsubscribing KIRK Handsets" on page 14-3
- "Removing KIRK Handsets from the List (Deregistering)" on page 14-4
- "Changing User Configurations" on page 14-6
- "Exporting Handset Registration Data" on page 14-7
- "Restoring Handset Registration Data" on page 14-9
- "Importing Handset Registration Data - CSV Format" on page 14-11
- "Adjusting the KIRK Handset" on page 14-13

Viewing Handset/User Configuration

Through the web based Administration Page, it is possible to view all the user configurations of the wireless system.

1 Click **Users**, and then click **List Users**.

Figure 14-1 *Adm. Page WS: Users/List Users page*

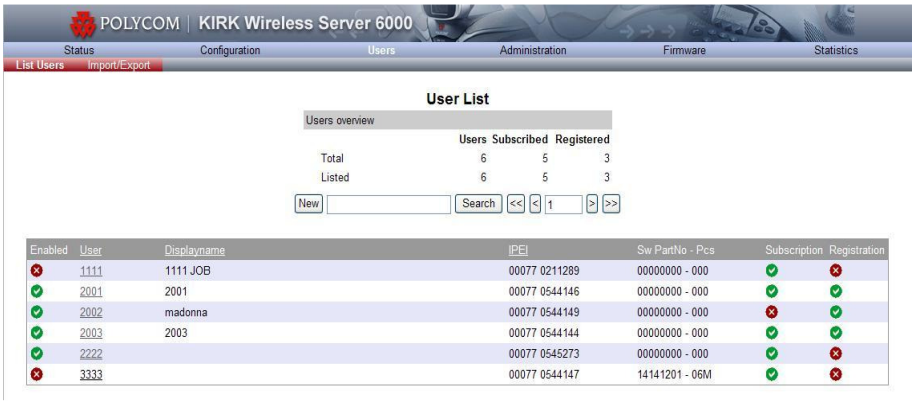


Searching for Handset/User Information

Through the web based Administration Page, it is possible to search for a registered handset/user in the system.

1 Click **Users**, and then click **List Users**.

Figure 14-2 *Adm. Page WS: Users/List Users page*



2 Type the beginning of a user, display name or IPEI to search for in the text field, and then click **Search**.

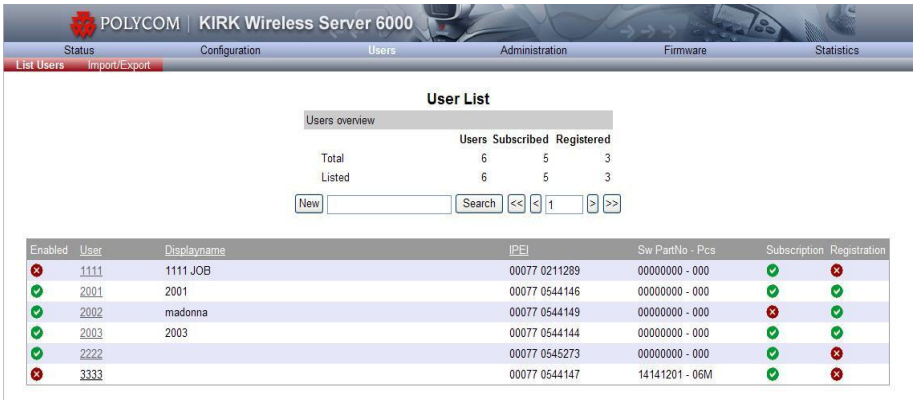
Removing KIRK Handsets from the List (Deregistering)

You can deregister handsets from KWS6000. This is necessary when:

- you must replace the handset due to loss or breakage.
- you want to assign the handset to a user with a different telephone number.

1 Click **Users**, and then click **List Users**.

Figure 14-3 *Adm. Page WS: Users/List Users page*



2 Type the beginning of a number or name to search for in the text field, and then click **Search** or select the handset in question by clicking on the user information.

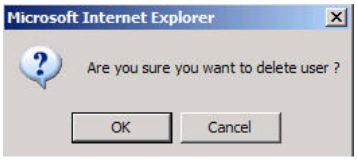
The following page appears.

Figure 14-4 *Adm. Page WS: Users/List Users/User page*

3 Click **Delete** to remove the registration.

A warning box appears.

Figure 14-5 Warning box



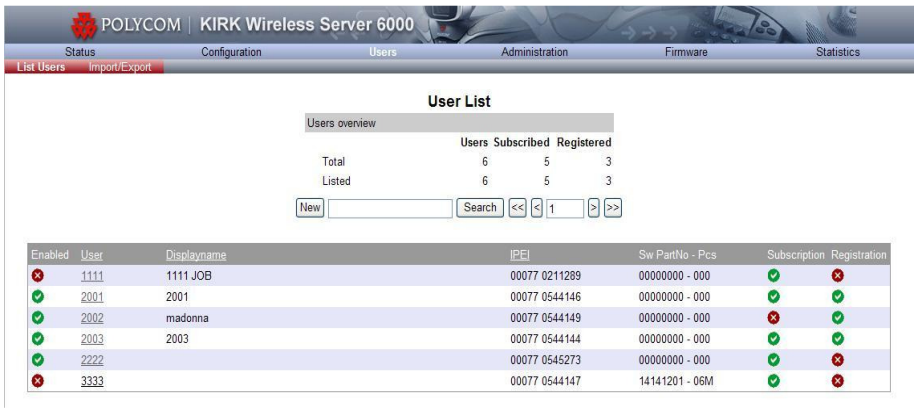
4 Click **OK**.

Changing User Configurations

You can change user configurations, such as the AC (authentication code) using the web based Administration Page.

1 Click **Users**, and then click **List Users**.

Figure 14-6 Adm. Page WS: Users/List Users page



2 Type the beginning of a number or name to search for in the text field, and then click **Search** or select the handset in question by clicking on the user information.

The following page appears.

Figure 14-7 Adm. Page WS: Users/List Users/User page

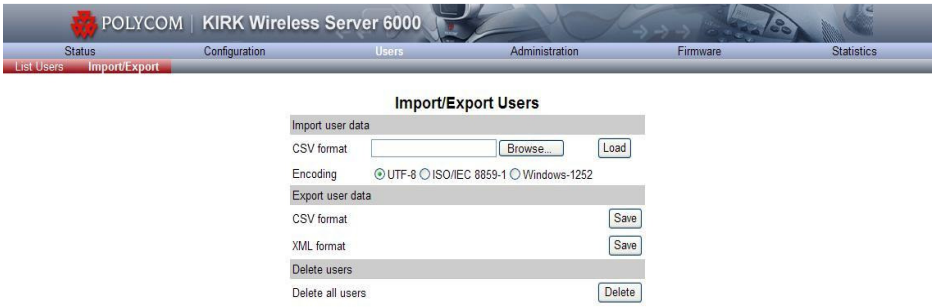
3 Change settings, and then click **Save**.

Exporting Handset Registration Data

You can export handset registration data using the web based Administration Page.

1 Click **Users**, and then click **Import/Export**.

Figure 14-8 *Adm. Page WS: Users/Import/Export page*



2 Under **Export User Data** do one of the following:

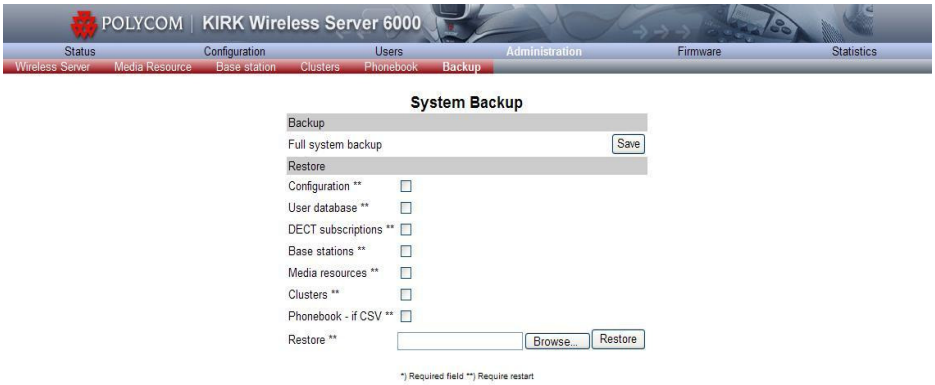
a To save user data in CSV format, click the **Save** button.

b To save user data in XML format, click the **Save** button.

You can export handset registration data also using the full system backup facility. Instead of separate backups of configuration, users etc. everything is in one backup and it is optional how much is restored.

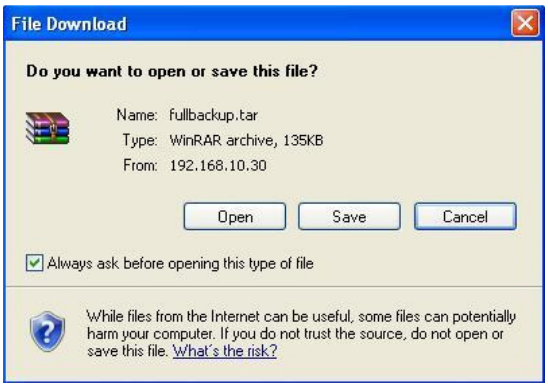
1 Click **Administration**, and then click **Backup**.

Figure 14-9 *Adm. Page WS: Admin/Backup page*



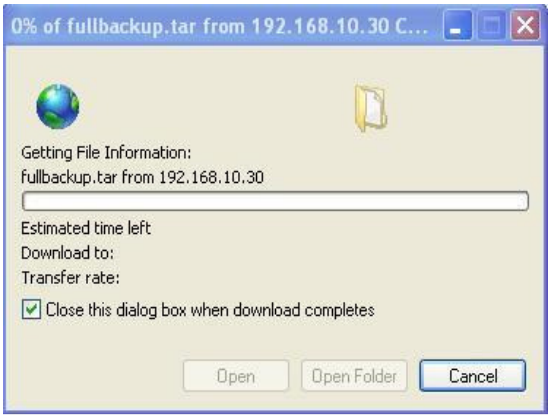
2 Under **Backup,** click the **Save** button for full system backup.

Figure 14-10 File download window


File Download
Do you want to open or save this file?
Name: fullbackup.tar
Type: WinRAR archive, 135KB
From: 192.168.10.30
Open
Save
Cancel
Always ask before opening this type of file
While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not open or save this file. What's the risk?

3 Click the **Save** button and choose the folder where you want to save the fullbackup.tar file and start the download.

Figure 14-11 Downloading process of the fulbackup file

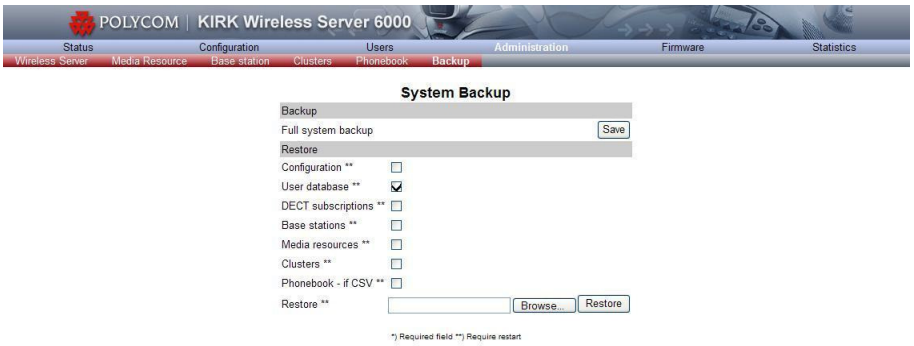


Restoring Handset Registration Data

You can restore handset registration data using the web based Administration Page. It is possible to restore a user database with subscriptions and to restore a user database separately from subscriptions (configuration data only).

1 Click **Administration,** and then click **Backup.**

Figure 14-12 *Adm. Page WS: Admin/Backup page*



2 Under **Restore** do one of the following:

a To restore configuration data, select the **User database** checkbox.

b To restore user data with subscriptions, select the **DECT subscriptions** checkbox.

3 A warning window will appear.

Figure 14-13 *Warning window*

4 Click **OK**.

5 In the **Restore** field, you can also **Browse** for the backup file and select it and then select the **Restore** button in order to restore the desired configurations out of the full system backup file.

6 Click **Reboot**.

The system is rebooted. This can take a few minutes.

Importing Handset Registration Data - CSV Format

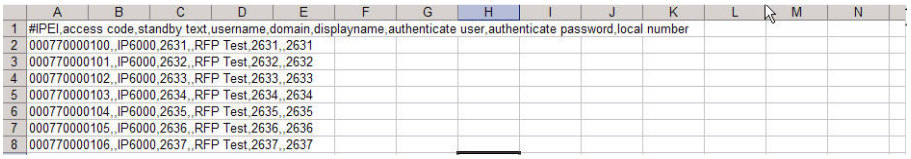
You can import handset registration data in CSV format. To be able to import the data correctly, you must create a file containing the following information and punctuation:

#IPEI,access code,standby text,username,domain,displayname,authenticate user,authenticate password,local number

Note

If you want to leave out some of the information, e.g. standby text, you must keep the commas, e.g.:**#IPEI,access code,,username,domain,displayname,authenticate user,authenticate password,local number**.

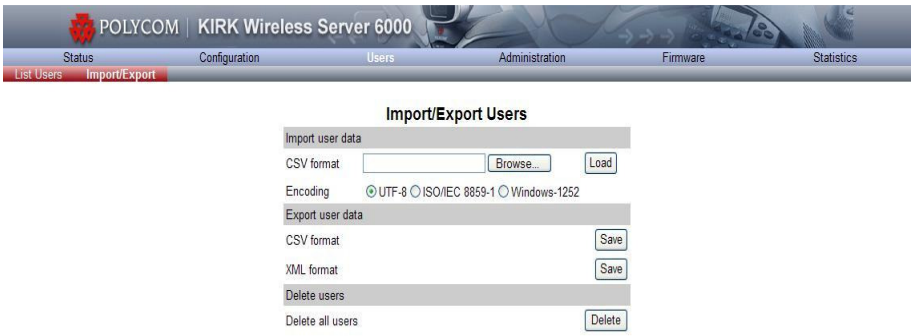
Figure 14-14 *Example of Handset Registration Data in CSV Format*



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	#IPEI,access code,standby text,username,domain,displayname,authenticate user,authenticate password,local number													
2	000770000100,,IP6000,2631,,RFP Test,2631,,2631													
3	000770000101,,IP6000,2632,,RFP Test,2632,,2632													
4	000770000102,,IP6000,2633,,RFP Test,2633,,2633													
5	000770000103,,IP6000,2634,,RFP Test,2634,,2634													
6	000770000104,,IP6000,2635,,RFP Test,2635,,2635													
7	000770000105,,IP6000,2636,,RFP Test,2636,,2636													
8	000770000106,,IP6000,2637,,RFP Test,2637,,2637													

1 Click **Users**, and then click **Import/Export**.

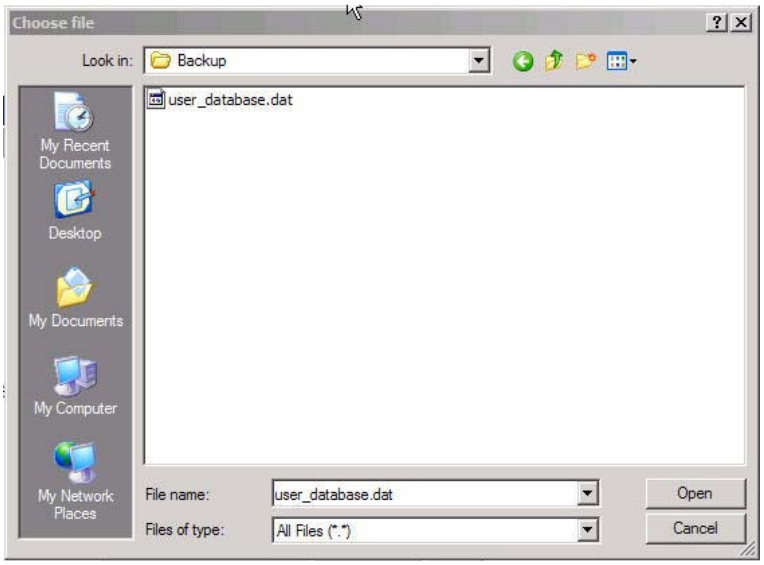
Figure 14-15 *Adm. Page WS: Users/Import/Export page*



2 Under **Import User Data**, click **Browse** to find the CSV file with handset registration data.

A **Choose File** dialog box appears.

Figure 14-16 *Adm. Page: Choose File dialog box*



3 Select the file in question, and then click **Open**.

4 Click **Load**.

5 Click **OK**.

Note It is not possible to import handset registration data already registered in the system.

15

System Management

This section provides you with information about the web based Administration Page of the KWS6000. The section describes how it is used for system management.

For information about using the Service Tool for system management of repeaters and handsets, refer to "Programming the KIRK Repeater with the Service Tool" on page 6-9 for information about repeater programming and "Adjusting the KIRK Handset with the Service Tool" on page 14-14 for information about handset adjustment.

For information on accessing the web based Administration Page, refer to "Accessing the Web Based Administration Page" on page 10-3.

Through the web based Administration Page of the KWS6000 it is possible to define and view different settings of the system, reading statistics, making a backup of configuration file, updating system software, and resetting the system.

This section includes information about system management of:

- "KIRK Wireless Server 6000" on page 15-2
- "KIRK Media Resource" on page 15-20
- "KIRK Base Station" on page 15-26

KIRK Wireless Server 6000

This section includes information about:

- "Changing System User Name and Password" on page 15-2
- "Reading System Information" on page 15-3
- "Reading Statistics" on page 15-7
- "Making a Back-Up of the Configuration File" on page 15-13
- "Restoring Configuration File" on page 15-15
- "Updating the KIRK Wireless Server 6000" on page 15-16
- "Restarting the KIRK Wireless Server 6000" on page 15-18

Changing System User Name and Password

Note Ensure that you have opened the Administration Page of the KWS6000.

From the Administration Page it is possible to change the user name and password for the system.

1 Click **Configuration**, and then click **Security**.

Figure 15-1 *Adm. Page WS: Configuration/Security page*

2 In the **Current password** field, type the current password.

3 In the **New user name** field, type a user name.

4 In the **New password** field, type a new password

5 In the **New password again** field, type the new password again to confirm it.

6 Click **Save** to change the password.

Reading System Information

Under **Status** it is possible to get general information about hardware version, firmware and message logging. This information is useful in case of problem solving. Accessing the Administration Page of the wireless server provides an overview of the solution, e.g. how the base stations are working.

Note Ensure that you have opened the Administration Page of the KWS6000.

This section provides information about:

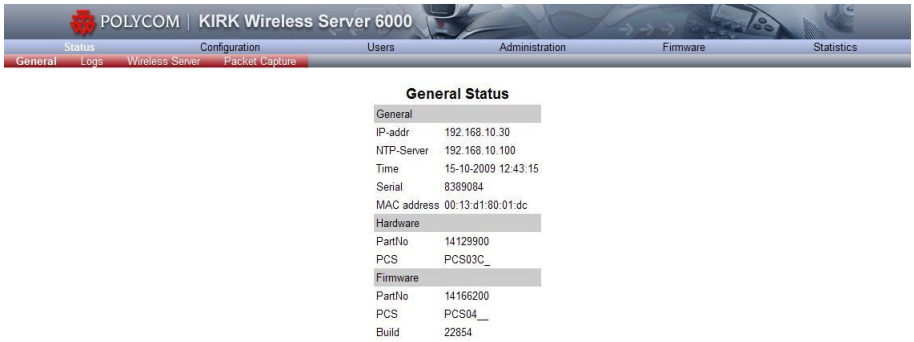
- "General Status Information" on page 15-3
- "Logs Information" on page 15-4
- "Wireless Server Information" on page 15-5
- "Packet Capture Information" on page 15-6

General Status Information

This page provides general system information such as hardware, firmware and OS Status information.

1 Click **Status**, and then click **General**.

Figure 15-2 *Adm. Page WS: Status/General page*



On the Status/General page you can read information about:

- the used firmware and hard ware
- Mac Address (serial number) of the system
- NTP Server; from which IP address the system receives its time information
- Time; time information - if a time server is valid

Logs Information

This page provides logs information such as media resource connection, base station connection and different types of status.

1 Click **Status**, and then click **Logs**.

Figure 15-3 *Adm. Page WS: Status/Logs page*

POLYCOM | KIRK Wireless Server 6000
Status
Configuration
Users
Administration
Firmware
Statistics
General
Logs
Wireless Server
Packet Capture
Message Log
Display filter notice
Clear
Export
Refresh
No.
Timestamp
Type
Message
0 31-12-2005 23:00:05.419 notice KGAP 0.9.16 (22854) started
1 31-12-2005 23:00:05.482 notice No license available
2 31-12-2005 23:00:05.662 notice MediaResource 0.9.10 22854 started
3 31-12-2005 23:00:05.826 notice KGAP Admin 0.9.16 (22854) started
4 31-12-2005 23:00:05.843 error Error joining multicast group: No such device
5 31-12-2005 23:00:05.903 notice msfphonebook started
6 15-10-2009 11:31:15.218 notice NTP set time offset:119532669324378usec
7 15-10-2009 11:33:42.752 warning HL_ME_U_PLANE_ind Me-Instance null. (Pmid:000002)
8 15-10-2009 11:33:42.752 notice Abnormal call release [code:f] from PPid:2 UserName:2003 in state 1
9 15-10-2009 11:43:04.062 notice ICT unexpected SIP response 480 PPID:4 UserName:2002
10 15-10-2009 12:12:23.574 critical RfpNo:0 Read on socket 30 failed: Connection reset by peer
11 15-10-2009 12:43:37.290 critical RfpNo:0 Read on socket 30 failed: Connection reset by peer
12 15-10-2009 15:33:07.509 notice No license available
13 15-10-2009 16:10:21.743 warning Failed SIP REGISTER PPID:5 UserName:2222
14 15-10-2009 16:10:57.373 warning Failed SIP REGISTER PPID:1 UserName:1111

2 From the **Display filter** list you can select between **emergency**, **critical**, **error**, **warning**, **notices**, **info** or **debug** depending on the logs you want to see.

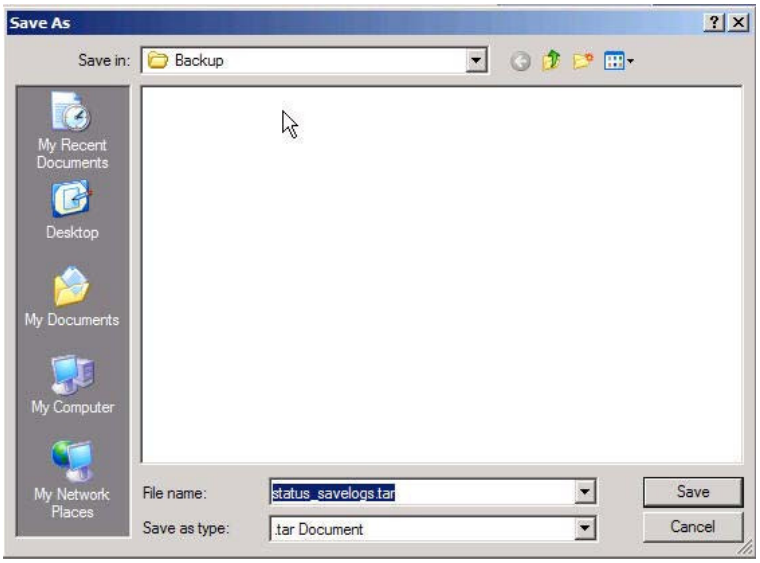
The different types of status are:

- Emergency is used for errors causing the system to malfunction for all calls
- Critical is used for events which do not occur under normal operation, which cause major malfunction. E.g. events that result in a permanent state of malfunction for a handset
- Error is used for events which do not occur under normal operation, which cause minor malfunction. E.g. events that result in a lost call
- Warning is used for events which do not occur under normal operation, which may cause malfunction. E.g. events that may result in a lost call
- Notice is used for events which occur under normal operation and are relevant for an administrator. E.g. KGAP started
- Information is used for events which occur under normal operation and may be relevant for an administrator. E.g new RFP connection
- Debug is used for debug information

3 Click **Save** if you want to save the logs in a file.

A **Save As** dialog box appears.

Figure 15-4 *Adm. Page: Save As dialog box*



4 Indicate in which folder and under what name the file should be saved, and then click **Save**.

It is now possible to send the log files to authorized technicians for further support and problem solving.

Wireless Server Information

This page provides information about the firmware version and ARI code of the KWS6000.

1 Click **Status**, and then click **Wireless Server**.

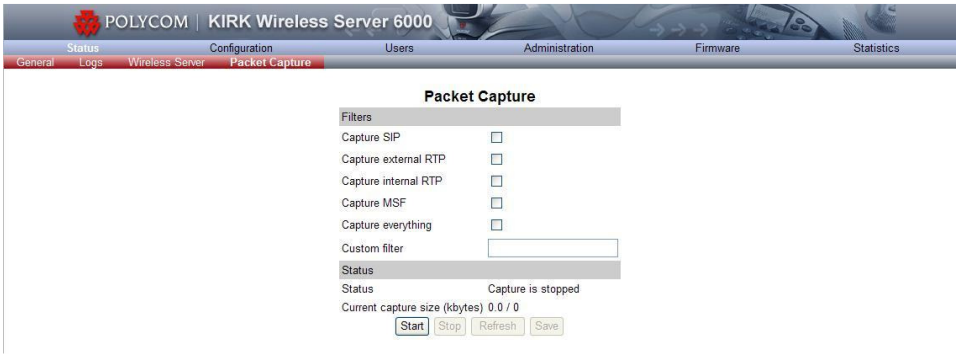
Figure 15-5 *Adm. Page WS: Status/WS page*

Packet Capture

This page provides tracing the packets transmitted during the calls**,** messaging etc.

1 Click **Status**, and then click **Packet Capture.**

Figure 15-6 *Adm. Page WS: Status/Packet Capture page*



2 Under **Filters** choose a single or several filters. (Capture SIP, Capture external RTP, Capture internal RTP, Capture MSF, Capture everything, Custom filter).

3 Under **Status** select the **Start** Button to begin capturing, **Stop** to stop capturing and finally the **Save** button to save the trace into the desired destination folder.

Reading Statistics

Under **Statistics**, it is possible to read statistic information about the KWS6000, media resource, base station, and calls, handovers and abnormal releases in the system. You get an overall overview of how the system is running.

Note Ensure that you have opened the Administration Page of the KWS6000.

This section provides information about:

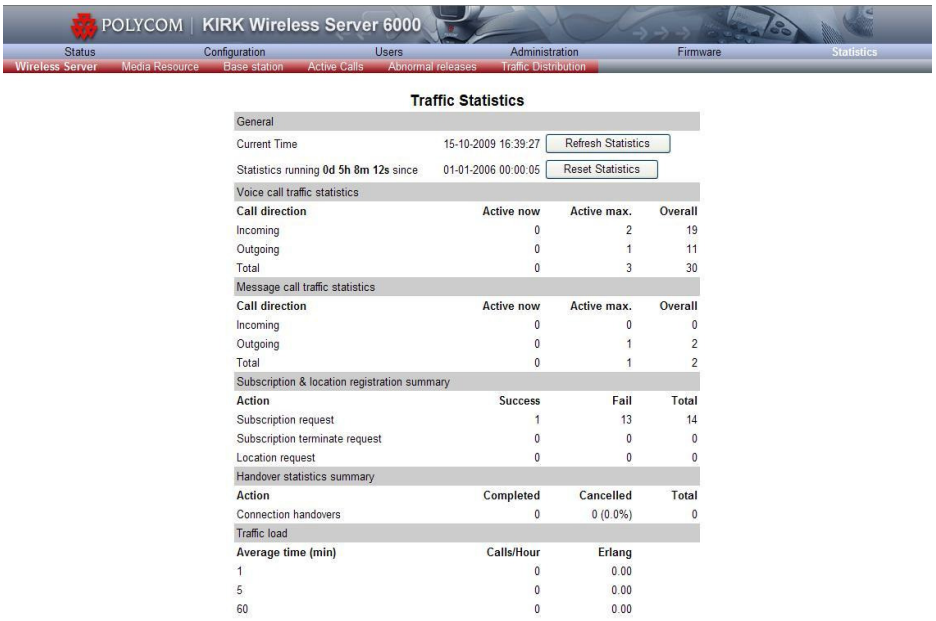
- "Wireless Server" on page 15-7
- "Media Resource" on page 15-8
- "Base Station" on page 15-9
- "Active Calls" on page 15-9
- "Abnormal Releases" on page 15-9
- "Traffic Distribution" on page 15-10

Wireless Server

This page is useful to get information about traffic on the KWS6000 such as voice call traffic and message call traffic and it provides a summary of subscription and handover statistics. It also provides information about the traffic load (Erlang) of the installation which is useful when determining the number of media resources needed.

1 Click **Statistics**, and then click **Wireless Server**.

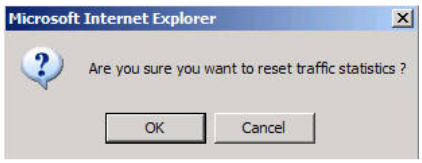
Figure 15-7 Adm. Page WS: Statistics/WS page


POLYCOM | KIRK Wireless Server 6000
Status
Configuration
Users
Administration
Firmware
Statistics
Wireless Server
Media Resource
Base station
Active Calls
Abnormal releases
Traffic Distribution
Traffic Statistics
General
Current Time
15-10-2009 16:39:27
Refresh Statistics
Statistics running 0d 5h 8m 12s since
01-01-2006 00:00:05
Reset Statistics
Voice call traffic statistics
Call direction | Active now | Active max. | Overall
Incoming | 0 | 2 | 19
Outgoing | 0 | 1 | 11
Total | 0 | 3 | 30
Message call traffic statistics
Call direction | Active now | Active max. | Overall
Incoming | 0 | 0 | 0
Outgoing | 0 | 1 | 2
Total | 0 | 1 | 2
Subscription & location registration summary
Action | Success | Fail | Total
Subscription request | 1 | 13 | 14
Subscription terminate request | 0 | 0 | 0
Location request | 0 | 0 | 0
Handover statistics summary
Action | Completed | Cancelled | Total
Connection handovers | 0 | 0 (0.0%) | 0
Traffic load
Average time (min) | Calls/Hour | Erlang
1 | 0 | 0.00
5 | 0 | 0.00
60 | 0 | 0.00

2 Click **Reset Statistics** if you want to delete all statistic traffic information.

A warning message appears.

Figure 15-8 Warning message



3 Click **OK**.

Media Resource

This page is useful to get information about the media resource.

1 Click **Statistics**, and then click **Media Resource**.

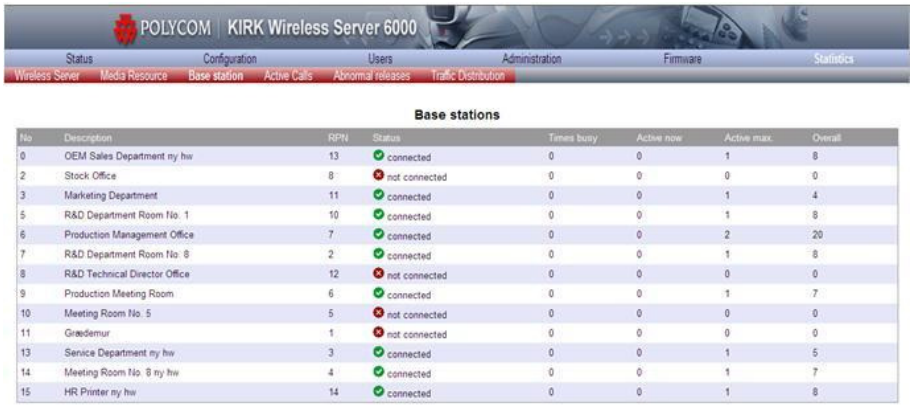
Figure 15-9 Adm. Page WS: Statistics/Media Resource page

Base Station

This page is useful to get statistic information about the base station.

1 Click **Statistics**, and then click **Base Station**.

Figure 15-10 Adm. Page WS: Statistics/Base Station page


POLYCOM
KIRK Wireless Server 6000
Status
Configuration
Users
Administration
Firmware
Statistics
Wireless Server
Media Resource
Base station
Active Calls
Abnormal releases
Traffic Distribution
Base stations
No
Description
RPN
Status
Times busy
Active now
Active max.
Overall
0 OEM Sales Department ny hw 13 connected 0 0 1 8
2 Stock Office 8 not connected 0 0 0 0
3 Marketing Department 11 connected 0 0 1 4
5 R&D Department Room No. 1 10 connected 0 0 1 8
6 Production Management Office 7 connected 0 0 2 20
7 R&D Department Room No. 8 2 connected 0 0 1 8
8 R&D Technical Director Office 12 not connected 0 0 0 0
9 Production Meeting Room 6 connected 0 0 1 7
10 Meeting Room No. 5 5 not connected 0 0 0 0
11 Grædemur 1 not connected 0 0 0 0
13 Service Department ny hw 3 connected 0 0 1 5
14 Meeting Room No. 8 ny hw 4 connected 0 0 1 7
15 HR Printer ny hw 14 connected 0 0 1 8

Active Calls

This page is useful to get statistic information about active calls in the KWS6000 installation.

1 Click **Statistics**, and then click **Active Calls**.

Figure 15-11 Adm. Page WS: Statistics/Active Calls page

Abnormal Releases

This page is useful to get statistic information about abnormal releases in a KWS6000 installation.

1 Click **Statistics**, and then click **Abnormal Releases**.

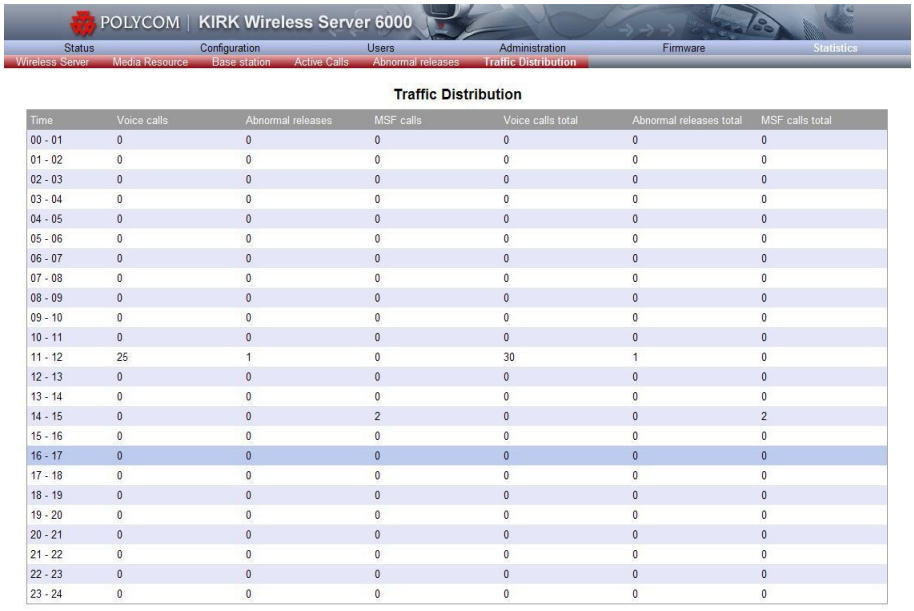
Figure 15-12 Adm. Page WS: Statistics/Abnormal Releases page

Traffic Distribution

This page is useful to get statistic information about traffic distribution during the last 24 hours in a KWS6000 installation.

1 Click **Statistics**, and then click **Traffic Distribution**.

Figure 15-13 Adm. Page WS: Statistics/Traffic Distribution page



Time	Voice calls	Abnormal releases	MSF calls	Voice calls total	Abnormal releases total	MSF calls total
00 - 01	0	0	0	0	0	0
01 - 02	0	0	0	0	0	0
02 - 03	0	0	0	0	0	0
03 - 04	0	0	0	0	0	0
04 - 05	0	0	0	0	0	0
05 - 06	0	0	0	0	0	0
06 - 07	0	0	0	0	0	0
07 - 08	0	0	0	0	0	0
08 - 09	0	0	0	0	0	0
09 - 10	0	0	0	0	0	0
10 - 11	0	0	0	0	0	0
11 - 12	25	1	0	30	1	0
12 - 13	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0
14 - 15	0	0	2	0	0	2
15 - 16	0	0	0	0	0	0
16 - 17	0	0	0	0	0	0
17 - 18	0	0	0	0	0	0
18 - 19	0	0	0	0	0	0
19 - 20	0	0	0	0	0	0
20 - 21	0	0	0	0	0	0
21 - 22	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0
23 - 24	0	0	0	0	0	0

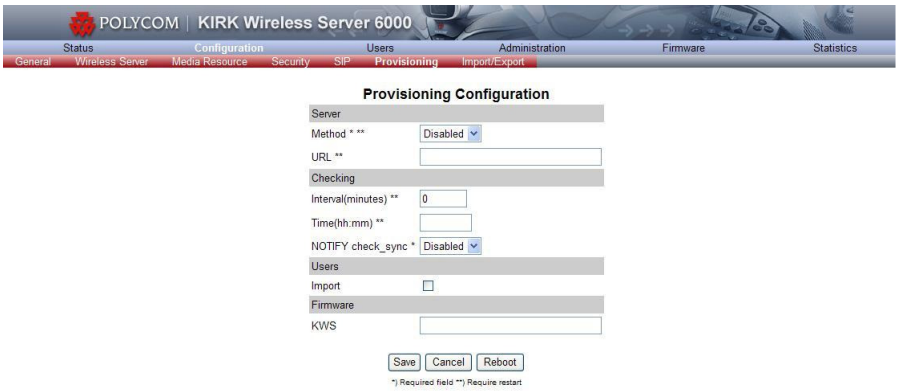
Provisioning configuration

Specifies the static boot server URL from where the KWS will retrieve configuration information. It is optional to specify a protocol. If the protocol is not specified the KWS will default to tftp.

Note For more detailed explanations concerning provisioning, consult the Provisioning_guide_KWS300_6000.

1 Click **Configuration**, and then **Provisioning**.

Figure 15-14 Adm. Page WS: Config/Provisioning page



Clusters

Clusters are relevant for de-centralized installations. Cluster handling refers to the mechanism of configuring a DECT wireless network formed by distributed remote areas.

1 Click **Administration**, and then select **Clusters**. Create a cluster.

Figure 15-15 Adm. Page WS: Admin/Clusters page

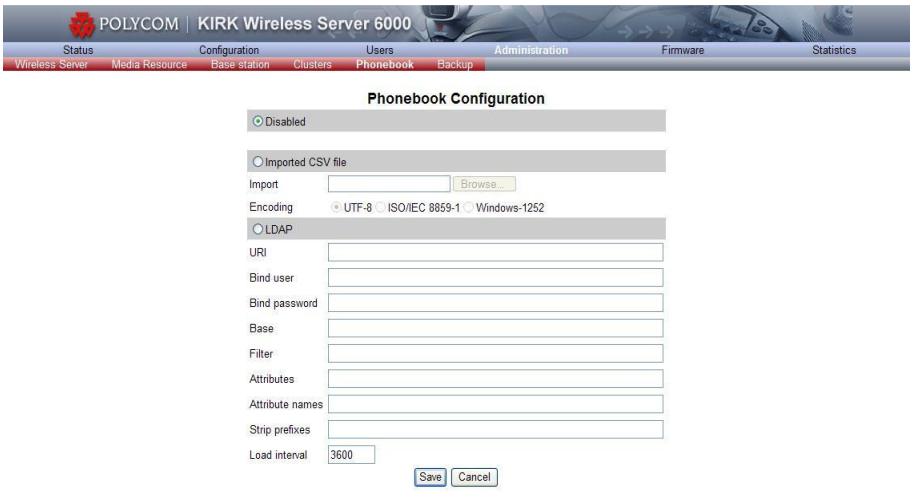
Phonebook configuration

The Phonebook application offers a centralized phonebook. The formats supported for the phonebook are CSV-file and LDAP.

Note For information on configuring the phonebook using a CSV formatted file and or using an LDAP server, refer to Configuring the Phonebook.

1 Click **Administration** and then click **Phonebook**.

Figure 15-16 *Adm. Page WS: Admin/Phonebook configuration page*



Making a Back-Up of the Configuration File

This section provides information about saving the configuration data of the KWS6000, registration and subscription data of the handset and system information.

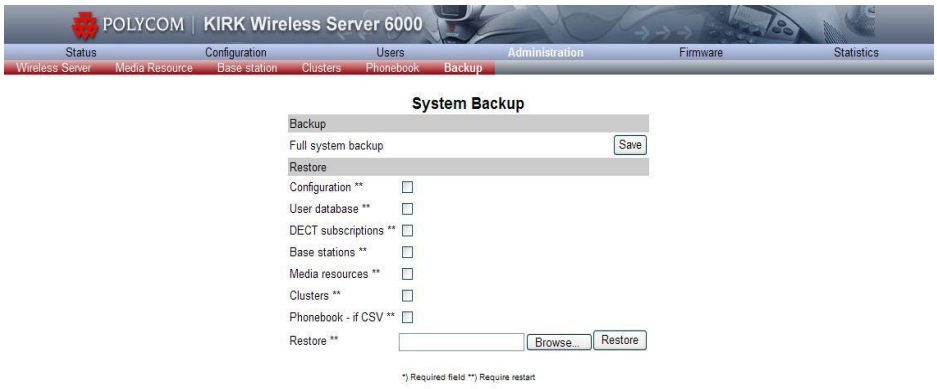
When saving the configuration data you have an overall overview of the KIRK Wireless Server which is useful in case of problem solving.

Note Ensure that you have opened the Administration Page of the KWS6000.

You can export configuration data using the full system backup facility. Instead of separate backups of configuration, users etc. everything is in one backup and it is optional how much is restored.

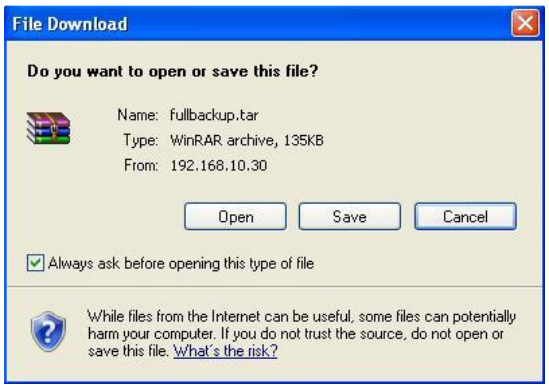
1 Click **Administration**, and then click **Backup**.

Figure 15-17 Adm. Page WS: Admin/Backup page



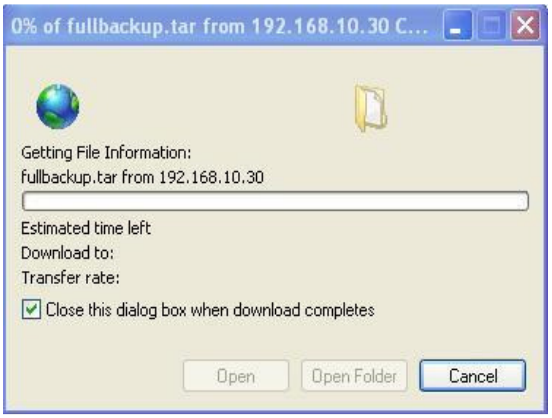
2 Under **Backup,** click the **Save** button for full system backup.

Figure 15-18 File download window


File Download
Do you want to open or save this file?
Name: fullbackup.tar
Type: WinRAR archive, 135KB
From: 192.168.10.30
Open
Save
Cancel
Always ask before opening this type of file
While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not open or save this file. What's the risk?

3 Click the **Save** button and choose the folder where you want to save the Full backup.tar file and start the download.

Figure 15-19 Downloading process of the fulbackup file



You can also export configuration data using the **Import/Export** feature.

1 Click Configuration, and then click **Import/Export**.

Figure 15-20 Adm. Page WS: Config/Import/Export

2 Under **Export configuration**, select the **Save** button. Further on, you can choose the destination folder you want to save the configuration file.

Restoring Configuration File

You can restore configuration data using the web based Administration Page, along with the other configured features included in the full system backup file, or separately from them.

1 Click **Administration,** and then click **Backup.**

Figure 15-21 Adm. Page WS: Admin/Backup page

2 Under **Restore,** select **Configuration.**

3 A warning window will appear.

Figure 15-22 Warning window

4 Click **OK**.

5 In the **Restore** field, you can also **Browse** for the backup file and select it and then select the **Restore** button in order to restore the desired configurations out of the full system backup file.

6 Click **Reboot**.

The system is rebooted. This can take a few minutes.

Updating the KIRK Wireless Server 6000

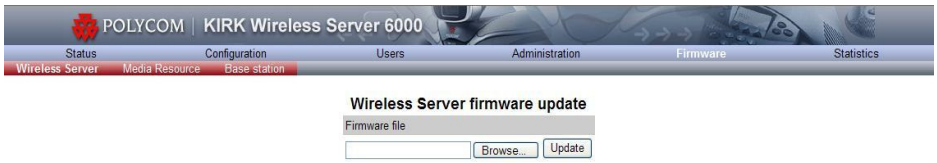
The software of the KWS6000 can be updated. To update the software you load a file to the system. Contact your distributor for newest software.

Note Ensure that you have opened the Administration Page of the KWS6000.

Updating KIRK Wireless Server 6000 Firmware

1 Click **Firmware**, and then click **Wireless Server**.

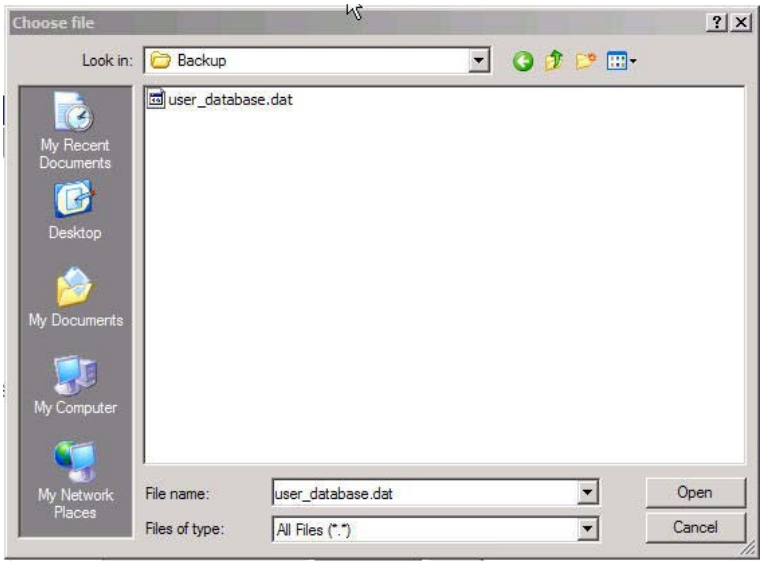
Figure 15-23 *Adm. Page WS: Firmware/WS page*



2 Click **Browse**.

A **Choose File** dialog box appears.

Figure 15-24 *Adm. Page: Choose File dialog box*



3 Select the file in question, and then click **Open**.

4 Click **Update**.

Wait until the system has finished updating.

Warning: Do not cut power.

Figure 15-25 Adm. Page: Firmware Update Progress Bar

5 Optionally, you can block new calls during a firmware update by clicking **Administration**, and then **Wireless Server**.

Figure 15-26 Adm. Page WS: Administration/WS page

Under **Service Status** click **Block**.

6 Click **Reboot** to update the KWS6000 firmware.

7 If you have blocked new calls during a firmware update, enable new calls again by clicking **Administration**, then **Wireless Server** and then clicking **Allow**.

Restarting the KIRK Wireless Server 6000

Some configuration changes require a restart in order to take effect. A reset restarts the KWS6000 software.

Note Ensure that you have opened the Administration Page of the KWS6000.

You must restart the system after the following procedures:

- configuring
- uploading configuration data
- uploading firmware

1 Click **Administration**, and then click **Wireless Server**.

Figure 15-27 *Adm. Page WS: Administration/WS page*

2 After **Wireless Server Uptime** click **Reboot**.

KIRK Media Resource

This section includes information about:

- "Changing System User Name and Password" on page 15-20
- "Reading System Information" on page 15-21
- "Reading Statistics" on page 15-24
- "Updating the KIRK Media Resource Firmware" on page 15-24

Changing System User Name and Password

Note Ensure that you have opened the Administration Page of the media resource.

From the Administration Page it is possible to change the user name and password for the system.

1 Click **Configuration**, and then click **Security**.

Figure 15-28 *Adm. Page Media Resource: Configuration/Security page*

2 In the **Current password** field, type the current password.

3 In the **New user name** field, type a user name.

4 In the **New password** field, type a new password

5 In the **New password again** field, type the new password again to confirm it.

6 Click **Save** to change the password.

Reading System Information

Under **Status** it is possible to get general information about hardware version, firmware and message logging. This information is useful in case of problem solving.

Note Ensure that you have opened the Administration Page of the media resource.

This sections provides information about:

- "General Status Information" on page 15-21
- "Logs Information" on page 15-22

General Status Information

This page provides general system information such as hardware, firmware and OS Status information.

1 Click **Status**, and then click **General**.

Figure 15-29 *Adm. Page Media Resource: Status/General page*

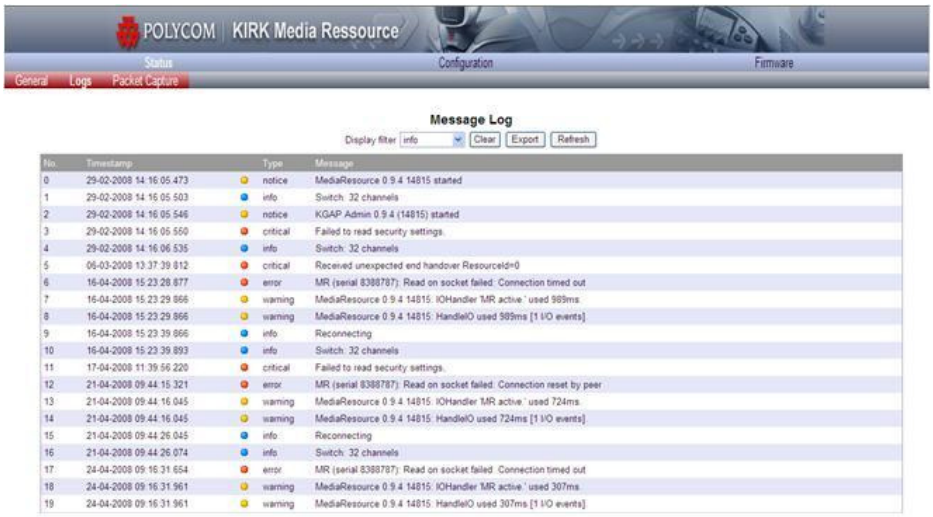
On the Status/General page you can read information about:

- the used firmware and hard ware
- Mac Address (serial number) of the system
- NTP Server; from which IP address the system receives its time information
- Time; time information - if a time server is valid

Logs Information

This page provides logs information such as media resource connection, base station connection and different types of status.

Figure 15-30 *Adm. Page Media Resource: Status/Logs page*


POLYCOM | KIRK Media Ressource
Status
Configuration
Firmware
General
Logs
Packet Capture
Message Log
Display filter info
Clear
Export
Refresh
No. Timestamp Type Message
0 29-02-2008 14:16:05.473 notice MediaResource 0.9.4 14815 started
1 29-02-2008 14:16:05.503 info Switch: 32 channels
2 29-02-2008 14:16:05.546 notice KGAP Admin 0.9.4 (14815) started
3 29-02-2008 14:16:05.550 critical Failed to read security settings.
4 29-02-2008 14:16:06.535 info Switch: 32 channels
5 06-03-2008 13:37:39.812 critical Received unexpected end handover ResourceId=0
6 16-04-2008 15:23:28.877 error MR (serial 8388787): Read on socket failed: Connection timed out
7 16-04-2008 15:23:29.866 warning MediaResource 0.9.4 14815: IOHandler 'MR active:' used 989ms.
8 16-04-2008 15:23:29.866 warning MediaResource 0.9.4 14815: HandleIO used 989ms [1 I/O events]
9 16-04-2008 15:23:39.866 info Reconnecting
10 16-04-2008 15:23:39.893 info Switch: 32 channels
11 17-04-2008 11:39:56.220 critical Failed to read security settings.
12 21-04-2008 09:44:15.321 error MR (serial 8388787): Read on socket failed: Connection reset by peer
13 21-04-2008 09:44:16.045 warning MediaResource 0.9.4 14815: IOHandler 'MR active:' used 724ms.
14 21-04-2008 09:44:16.045 warning MediaResource 0.9.4 14815: HandleIO used 724ms [1 I/O events]
15 21-04-2008 09:44:26.045 info Reconnecting
16 21-04-2008 09:44:26.074 info Switch: 32 channels
17 24-04-2008 09:16:31.654 error MR (serial 8388787): Read on socket failed: Connection timed out
18 24-04-2008 09:16:31.961 warning MediaResource 0.9.4 14815: IOHandler 'MR active:' used 307ms.
19 24-04-2008 09:16:31.961 warning MediaResource 0.9.4 14815: HandleIO used 307ms [1 I/O events]

1 From the **Display filter** list you can select between **emergency**, **critical**, **error**, **warning**, **notice**, **info** or **debug** depending on the logs you want to see.

The different types of status are:

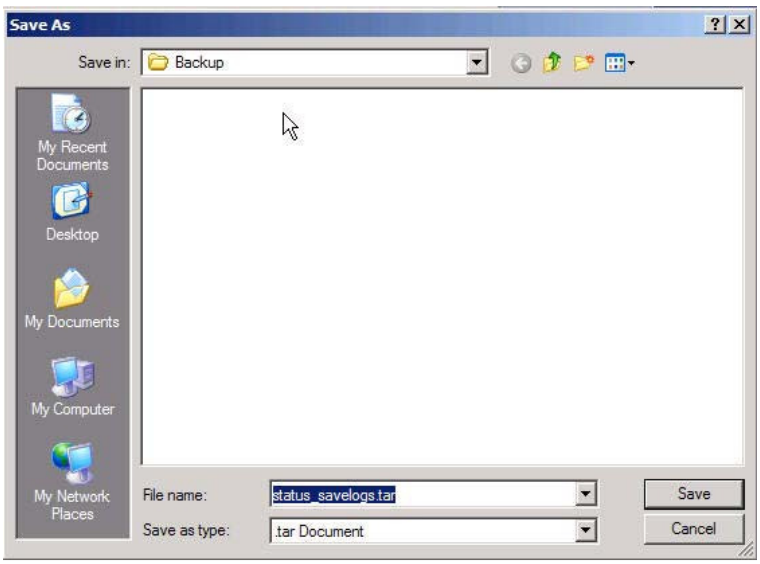
- Emergency is used for errors causing the system to malfunction for all calls
- Critical is used for events which do not occur under normal operation, which cause major malfunction. E.g. events that result in a permanent state of malfunction for a handset
- Error is used for events which do not occur under normal operation, which cause minor malfunction. E.g. events that result in a lost call
- Warning is used for events which do not occur under normal operation, which may cause malfunction. E.g. events that may result in a lost call
- Notice is used for events which occur under normal operation and are relevant for an administrator. E.g. KGAP started
- Information is used for events which occur under normal operation and may be relevant for an administrator. E.g new RFP connection
- Debug is used for debug information

2 Click **Status**, and then click **Logs**.

3 Click **Save** if you want to save the logs in a file.

A **Save As** dialog box appears.

Figure 15-31 *Adm. Page: Save As dialog box*



4 Indicate in which folder and under what name the file should be saved, and then click **Save**.

It is now possible to send the log files to authorized technicians for further support and problem solving.

Reading Statistics

Statistic information about the media resource is retrieved from the Administration Page of the KWS6000. For more information about reading statistics for the media resource, refer to "Reading Statistics" on page 15-7.

Updating the KIRK Media Resource Firmware

The software of the media resource can be updated. To update the software you load a file to the system. Contact your distributor for newest software.

Updating KIRK Media Resource Firmware

Note Ensure that you have opened the Administration Page of the media resource.

1 Click **Firmware**, and then click **Media Resource**.

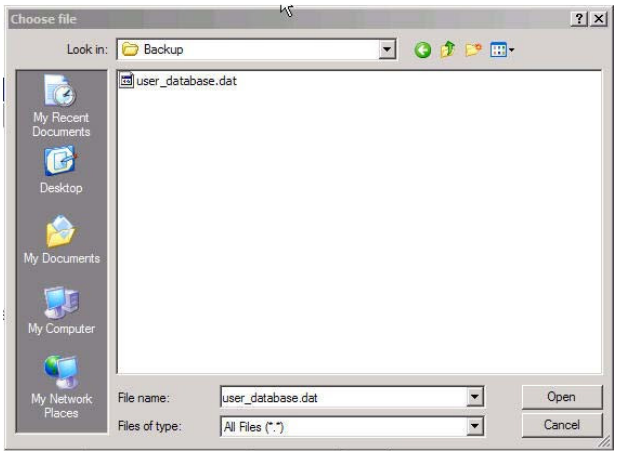
Figure 15-32 *Adm. Page Media Resource: Firmware/Media Resource page*

Figure 15-33 *Adm. Page WS: Firmware/Media Resource page*

2 Click **Browse**.

A **Choose File** dialog box appears.

Figure 15-34 Adm. Page: Choose File dialog box



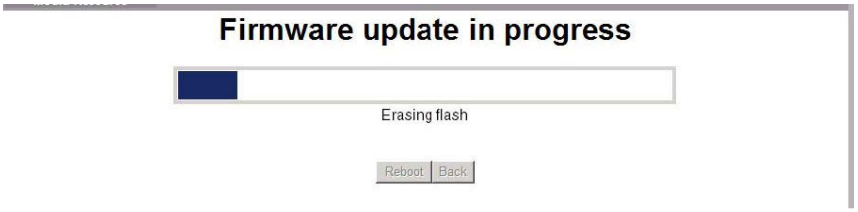
3 Select the file in question, and then click **Open**.

The file to select has the extension **.bin**.

4 Click **Update**.

Wait until the system has finished uploading.

Figure 15-35 Adm. Page: Firmware Update Progress Bar



5 Optionally, you can block new calls during a firmware update by clicking **Administration** (Administration Page of KWS6000), and then **Wireless Server**.

Figure 15-36 Adm. Page WS: Administration/WS page

Under **Service Status** click **Block**.

6 When the update is finished, click **Reboot** to execute the changes.

7 If you have blocked new calls during a firmware update, enable new calls again by clicking **Administration** (Administration Page of KWS6000), then **Wireless Server** and then clicking **Allow**.

KIRK Base Station

This section includes information about:

- "Changing System User Name and Password" on page 15-26
- "Reading System Information" on page 15-27
- "Reading Statistics" on page 15-29
- "Sync State of Base Station" on page 15-29
- "Updating the KIRK Base Station Firmware" on page 15-31

Changing System User Name and Password

Note Ensure that you have opened the Administration Page of the base station.

From the Administration Page it is possible to change the user name and password for the system.

1 Click **Configuration**, and then click **Security**.

Figure 15-37 Adm. Page Base Station: Configuration/Security page

2 In the **Current password** field, type the current password.

3 In the **New user name** field, type a user name.

4 In the **New password** field, type a new password

5 In the **New password again** field, type the new password again to confirm it.

6 Click **Save** to change the password.

Reading System Information

Under **Status** it is possible to get general information about hardware version, firmware and message logging. This information is useful in case of problem solving.

Note Ensure that you have opened the Administration Page of the base station.

This sections provides information about:

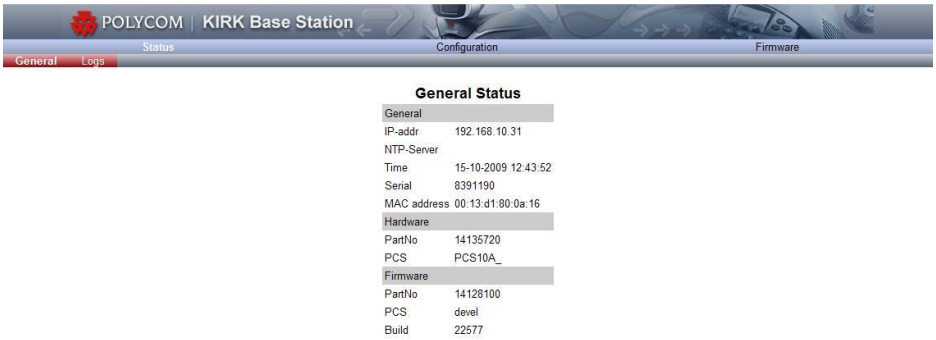
- "General Status Information" on page 15-27
- "Logs Information" on page 15-28

General Status Information

This page provides general system information such as hardware, firmware and OS Status information.

1 Click **Status**, and then click **General**.

Figure 15-38 *Adm. Page Base Station: Status/General page*



On the Status/General page you can read information about:

- the used firmware and hard ware
- Mac Address (serial number) of the system
- NTP Server; from which IP address the system receives its time information
- Time; time information - if a time server is valid

Logs Information

This page provides logs information such as media resource connection, base station connection and different types of status.

The different types of status are:

- Emergency is used for errors causing the system to malfunction for all calls
- Critical is used for events which do not occur under normal operation, which cause major malfunction. E.g. events that result in a permanent state of malfunction for a handset
- Error is used for events which do not occur under normal operation, which cause minor malfunction. E.g. events that result in a lost call
- Warning is used for events which do not occur under normal operation, which may cause malfunction. E.g. events that may result in a lost call
- Notice is used for events which occur under normal operation and are relevant for an administrator. E.g. KGAP started
- Information is used for events which occur under normal operation and may be relevant for an administrator. E.g new RFP connection
- Debug is used for debug information

1 Click **Status**, and then click **Logs**.

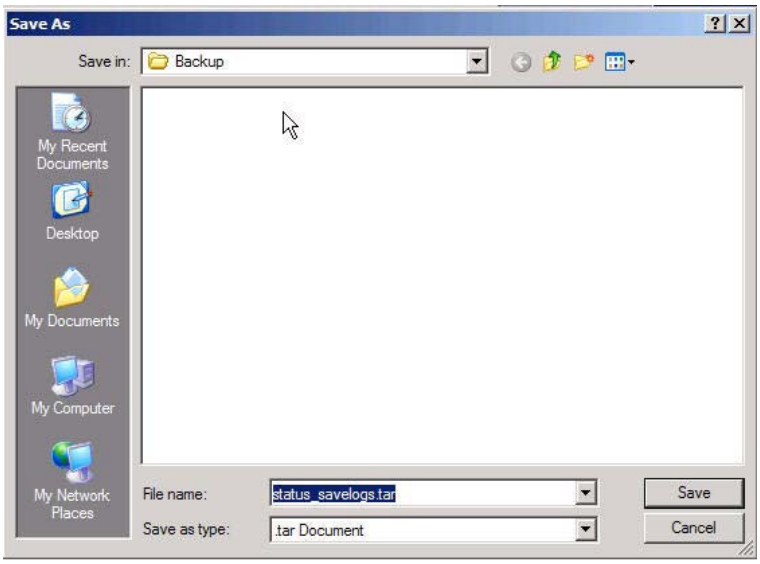
Figure 15-39 Adm. Page Base Station: Status/Logs page

2 From the **Display filter** list you can select between **emergency**, **critical**, **error**, **warning**, **notices**, **info** or **debug** depending on the logs you want to see.

3 Click **Save** if you want to save the logs in a file.

A **Save As** dialog box appears.

Figure 15-40 Adm. Page: Save As dialog box



4 Indicate in which folder and under what name the file should be saved, and then click **Save**.

It is now possible to send the log files to authorized technicians for further support and problem solving.

Reading Statistics

Statistic information about the base station is retrieved from the Administration Page of the KWS6000. For more information about reading statistics for the base station, refer to "Reading Statistics" on page 15-7.

Sync State of Base Station

You can get information about the synchronization state of the base station - the uptime and to which radio unit it synchronizes on. This is useful when you want to get an overview of the base stations and in case of problem solving.

Note Information about the synchronization state of the base station is retrieved from the Administration Page of the KWS6000.

Checking Sync State

Note Ensure that you have opened the Administration Page of the KWS6000.

1 Click **Administration**, and then click **Base Station**.

Figure 15-41 *Adm. Page WS: Administration/Base station (WS) page*

POLYCOM | KIRK Wireless Server 6000
Status
Configuration
Users
Administration
Firmware
Statistics
Wireless Server
Media Resource
Base station
Clusters
Phonebook
Backup
Base stations
Sync. Master
No
Serial
Description
RPN
Firmware
Status
Uptime
Sync
Prim/Alt
Lost
Changed
0 8389097 OEM Sales Department ny hw 13 PCS01C_ connected 0d 22h 15m 32s 6/2 0 4613
2 8388931 Stock Office 8 not connected 0d 0h 0m 0s 2/10 0 0
3 8388929 Marketing Department 11 PCS01C_ connected 0d 22h 15m 30s 12/10 0 0
5 8388920 R&D Department Room No. 1 10 PCS01C_ connected 0d 22h 15m 30s 6/7 0 6202
6 8388963 Production Management Office 7 PCS01C_ connected 0d 22h 15m 25s 7/7 0 0
7 8388972 R&D Department Room No. 8 2 PCS01C_ connected 0d 22h 15m 27s 6/7 0 5994
8 8388977 R&D Technical Director Office 12 not connected 0d 0h 0m 0s 5/13 0 0
9 8388968 Production Meeting Room 6 PCS01C_ connected 0d 22h 15m 25s 7/1 0 0
10 8388948 Meeting Room No. 5 5 not connected 0d 0h 0m 0s 6/13 0 0
11 8388947 Grademur 1 not connected 0d 0h 0m 0s 7/6 0 0
13 8389098 Service Department ny hw 3 PCS01C_ connected 0d 22h 15m 22s 13/4 0 1741
14 8389115 Meeting Room No. 8 ny hw 4 PCS01C_ connected 0d 22h 15m 29s 6/7 0 4016
15 8389118 HR Printer ny hw 14 PCS01C_ connected 0d 22h 15m 31s 6/7 0 2762

Figure 15-42 *Sync States of Base Station - Colour Description*

2 Check the sync state of the base stations:

- If marked with blue: Free running (Sync Master)
- If marked with green: Synchronized to primary (Primary Sync Master)
- If marked with yellow: Synchronized to alternative (Alternative Sync Master)
- If marked with red: Searching (not in sync with any radio unit)
- If marked with grey: Unknown (not connected - base station removed from installation)

Note When double-clicking on a base station in the list, you can check the the RSSI values of the base stations it is synchronizing on (Primary sync/Secondary (Alternative) sync).

Updating the KIRK Base Station Firmware

The software of the base station can be updated. To update the software you load a file to the system. Contact your distributor for newest software.

Note The base station firmware can be updated both from the Administration Page of the base station or the KWS6000.

Updating KIRK Base Station Firmware

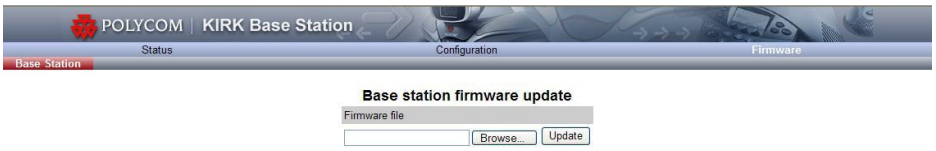
Note Ensure that you have opened the Administration Page of the KWS6000.

You can specify a range of base stations to be updated with new firmware.

1 Click **Firmware**, and then click **Base Station**.

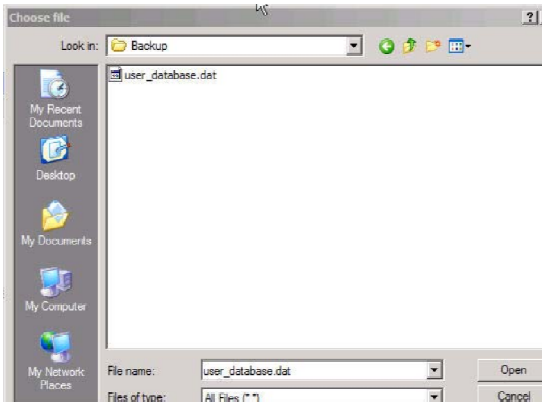
Figure 15-43 *Adm. Page WS: Firmware/Base station page*

Figure 15-44 *Adm. Page BS: Firmware/Base station page*



2 In the **Firmware file** field, click **Browse**. A **Choose File** dialog box appears.

Figure 15-45 *Adm. Page: Choose File dialog box*



3 Select the file in question, and then click **Open**.

The file to select has the extension **.bin**.

4 In the **Start RFP No** field, type the number of the first base station to be updated.

Note: You can check base station numbers under **Administration/Base station**.

5 In the **End RFP No** field, type the number of the last base station to be updated.

6 Click **Update**.

Wait until the system has finished uploading. All base stations in the range specified are updated.

Note: You can check the update status under **Administration/Base station** while the update is progressing. Each update takes approximately 30 seconds.

Figure 15-46 *Update base station firmware page*

7 Optionally, you can block new calls during a firmware update by clicking **Administration**, and then **Wireless Server**.

Figure 15-47 *Adm. Page WS: Administration/WS page*

Under **Service Status** click **Block**.

8 When the update is finished, reboot the base stations to make execute the changes.
Note: Make sure you reboot the base stations – not the KWS6000 server itself. To reboot the base stations go to Firmware -> Base Stations -> select the base station range which shall be rebooted and click the Reboot base station button.

16

Application integration

With a KIRK DECT solution it is possible to make applications which send text messages to any messaging compatible KIRK DECT handsets. This makes it possible to create solutions with specific functionality targeting specific verticals.

Examples on such vertical applications are:

- Integration to nurse call systems
- Fire alert broadcast to all handsets
- Technical info send as notification
- Escalated alarms which require acknowledge.

KWS6000 offers 3 different ways to implement messaging functionality to the KIRK DECT handsets.

1. SIP Messaging: One way notifications only
2. KIRK MSF: Previous generation API for backward comp ability
3. XML-RPX: SDK for messaging and extended use of the DECT solution.

Different Types of Messages

It is possible to send text messages from handset to handset, from handset to server and from server to handset. Each message can consist of up to 72 characters. A handset can receive a text message whether it is on or off hook. Reception of a text message is signaled by a beep tone.

With messaging it is possible to send two different types of messages:

- On Way Text

  A message which not requires an answer from the recipient.
  Examples of One Way Texts include reminders; updates and basic notifications such as “Remember the meeting at 3 PM”.

  One Way Text is also called Fire and Forget.

Information about the messages which has been sent and received is available in the feedback from the SDK, as an acknowledgement status of each message having reached the handset display.

- Two Way Text

  A message which the recipient can answer by returning relevant keypad information to the sender.
  An example of Two Way Text could be sending the following message to a numbers of users; "Who will attend the meeting at 3 PM"?. Each recipient answers the message using the keypad and the Administration Page can then send message updates.

  It is also possible to include a call back number in the message.
  Adding a call back number makes it possible for the recipient to call the number automatically simply by pressing the off hook bottom. When a call back number is included, the message can consist of a maximum of 36 characters.

  Two Ways Text is also called "Text call".

  Confirmation of sent messages having been received is done by the recipient answering the message. It is also shown in the system as an acknowledgement of each message having reached the handset display. If a message does not receive an answer within a specified period of time (for instance 30 seconds) it is possible to preset the system to automatically send it to another relevant user.

When using the XML-RPC for text messaging it is possible to:

- **S**ent to a single handset as a Two Way Text message.

  The system can handle a maximum of 26-30 messages per minut being sent simultaneously from the system to a number of handsets.

- Broadcast

  An text message can be sent to all handsets at the same time as a One Way Text message.

  The system can handle a maximum of 26-30 messages per minut to all handsets simultaneously from the system.

Getting started

The XML-RPC SDK can be downloaded for free from the Polycom website – navigate to the resource site for the KWS6000:

http://www.polycom.eu/support/voice/dect/dect_ws_6000.html

Click on the XML-RPC link.

Then you can download the SDK with documentation and examples for creating applications.

For more information about obtaining the Polycom SDK package, contact Polycom.

17

Regulatory Notices

This section contains important safety regulations for the KWS6000.

International Regulatory and Product Information

CE	**This KIRK product has been marked with the CE mark. This mark indicates compliance with EEC Directives 89/336/EEC, 73/23/EEC 1999/5/EC. A full copy of the Declaration of Conformity can be obtained from Polycom Ltd, 270 Bath Road, Slough, Berkshire, SL1 4DX, UK.**

Cesky [Czech]:	Polycom (UK) Ltd tímto prohlašuje, že tento KIRK KWS6000 Server je ve shode se základními požadavky a dalšími príslušnými ustanoveními smernice 1999/5/ES.
Dansk [Danish]:	Undertegnede Polycom (UK) Ltd erklærer herved, at følgende udstyr KIRK KWS6000 Server overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
Deutsch [German]:	Hiermit erklärt Polycom (UK) Ltd, dass sich das Gerät KIRK KWS6000 Server in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.

Eesti [Estonian]:	Käesolevaga kinnitab Polycom (UK) Ltd seadme KIRK KWS6000 Server vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
English:	Hereby, Polycom (UK) Ltd. declares that this KIRK KWS6000 Server is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Español [Spanish]:	Por medio de la presente Polycom (UK) Ltd declara que el KIRK KWS6000 Server cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Ελληνική [Greek]:	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Polycom (UK) Ltd ΔΗΛΩΝΕΙ ΟΤΙ KIRK KWS6000 Server ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
Français [French]:	Par la présente Polycom (UK) Ltd déclare que l'appareil KIRK KWS6000 Server est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
Italiano [Italian]:	Con la presente Polycom (UK) Ltd dichiara che questo KIRK KWS6000 Server è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Íslenska (Icelandic):	Hér með lýsir Polycom (UK) Ltd yfir því að KIRK KWS6000 Server er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC
Latviski [Latvian]:	Ar šo Polycom (UK) Ltd deklare, ka KIRK KWS6000 Server atbilst Direktivas 1999/5/EK butiskajam prasibam un citiem ar to saistitajiem noteikumiem.
Lietuviu [Lithuanian]:	Šiuo Polycom (UK) Ltd deklaruoja, kad šis KIRK KWS6000 Server atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
Nederlands [Dutch]:	Hierbij verklaart Polycom (UK) Ltd dat het toestel KIRK KWS6000 Server in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
Malti [Maltese]:	Hawnhekk, Polycom (UK) Ltd, jiddikjara li dan KIRK KWS6000 Server jikkonforma mal-htigijiet essenzjali u ma provvedimenti ohrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.

Magyar [Hungarian]:	Alulírott, Polycom (UK) Ltd nyilatkozom, hogy a KIRK KWS6000 Server megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.
Norsk [Norwegian]:	Polycom (UK) Ltd erklærer herved at utstyret KIRK KWS6000 Server er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.
Polski [Polish]:	Niniejszym Polycom (UK) Ltd oswiadcza, ze KIRK KWS6000 Server jest zgodne z zasadniczymi wymaganiami oraz innymi stosownymi postanowieniami Dyrektywy 1999/5/WE
Português [Portuguese]:	Polycom (UK) Ltd declara que este KIRK KWS6000 Server está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
Slovensko [Slovenian]:	Polycom (UK) Ltd izjavlja, da je ta KIRK KWS6000 Server v skladu z bistvenimi zahtevami in ostalimi relevantnimi dolocili direktive 1999/5/ES.
Slovensky [Slovak]:	Polycom (UK) Ltd týmto vyhlasuje, že KIRK KWS6000 Server splna základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
Suomi [Finnish]:	Polycom (UK) Ltd vakuuttaa täten että KIRK KWS6000 Server tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Svenska [Swedish]:	Härmed intygar Polycom (UK) Ltd att denna KIRK KWS6000 Server står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

Explosive Device Proximity Warning

	Warning. Do not operate your wireless network device near unshielded blasting caps or in an explosive environment unless the device has been modified to be especially qualified for such use.

Waarschuwing	**Gebruik dit draadloos netwerkapparaat alleen in de buurt van onbeschermde ontstekers of in een omgeving met explosieven indien het apparaat speciaal is aangepast om aan de eisen voor een dergelijk gebruik te voldoen.**
Varoitus	**Älä käytä johdotonta verkkolaitetta suojaamattomien räjäytysnallien läheisyydessä tai räjäytysalueella, jos laitetta ei ole erityisesti muunnettu sopivaksi sellaiseen käyttöön.oen.**
Attention	**Ne jamais utiliser un équipement de réseau sans fil à proximité d'un détonateur non blindé ou dans un lieu présentant des risques d'explosion, sauf si l'équipement a été modifié à cet effet.**
Warnung	**Benutzen Sie Ihr drahtloses Netzwerkgerät nicht in der Nähe ungeschützter Sprengkapseln oder anderer explosiver Stoffe, es sei denn, Ihr Gerät wurde eigens für diesen Gebrauch modifiziert und bestimmt.**
Avvertenza	**Non utilizzare la periferica di rete senza fili in prossimità di un detonatore non protetto o di esplosivi a meno che la periferica non sia stata modificata a tale proposito.**
Advarsel	**ikke bruk den trådløse nettverksenheten nært inntil uisolerte fenghetter eller i et eksplosivt miljø med mindre enheten er modifisert slik at den tåler slik bruk.**
Aviso	**Não opere o dispositivo de rede sem fios perto de cápsulas explosivas não protegidas ou num ambiente explosivo, a não ser que o dispositivo tenha sido modificado para se qualificar especialmente para essa utilização.**
¡Advertencia!	**No utilizar un aparato de la red sin cable cerca de un detonador que no esté protegido ni tampoco en un entorno explosivo a menos que el aparato haya sido modificado con ese fin.**
Varning!	**Använd inte den trådlösa nätverksenheten i närheten av oskyddade tändhattar eller i en explosiv miljö om inte enheten modifierats för att kunna användas i sådana sammanhang.**

	The WEEE Marking on this equipment indicates that the product must not be disposed of with unsorted waste, but must be collected separately.

Appropriate RF safety/installation information

The product is intended to be installed by authorized personal. The product shall be installed in accordance with FCC rules.

RF Exposure Statement

The EUT is considered as a mobile device according to OET Bulletin 65, Edition – 97 – 01. Therefore distance to human body of min. 20 cm is determined.
The internal / external antennas used for this mobile transmitter must provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

WARNING

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures. The above warning is inserted for regulatory reasons. If any customer believes that they have an interference problem, either because their Polycom product seems to cause interference or suffers from interference, they should contact their distributor immediately. The distributor will assist with a remedy for any problems and, if necessary, will have full support from Polycom

Safety

WARNING!

Only qualified service personnel may install this equipment. The instructions in this manual are intended for use by qualified service personnel only.

Only qualified persons should service the system.

The installation and service of this hardware is to be performed only by service personnel having appropriate training and experience necessary to be aware of hazards to which they are exposed in performing a task and of measures to minimize the danger to themselves or other persons.

Electrical shock hazards from the telecommunication network and AC mains are possible with this equipment. To minimize risk to service personnel and users, the system must be connected to an outlet with a third-wire Earth.

Service personnel must be alert to the possibility of high leakage currents becoming available on metal system surfaces during power line fault events near network lines. These leakage currents normally safely flow to Protective Earth via the power cord. Therefore, it is mandatory that connection to an earthed outlet is performed first and removed last when cabling to the unit. Specifically, operations requiring the unit to be powered down must have the network connections (exchange lines) removed first.

Important Safety Instructions and Product Information

Before using your telephone equipment, you should always follow basic safety instruction to reduce the risk of fire, electrical shock and injury to persons, and damage to property.

1 Read and understand all instructions

2 Follow all warnings and instructions including those marked on the product

3 Unplug this product before cleaning. Do not use liquid cleaners or aerosol cleaners. Use damp cloth for cleaning

4 Do not install the telephone equipment in the bathroom or near a wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool

5 The product should be operated only from the type of power source indicated on the instructions. If you are not sure of the type of power supply, consult your dealer or local power company.

6 Do not overload wall outlets and extension cords as this can result in fire or electrical shock.

7 Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in fire, electrical shock, or injury. Never spill liquid of any kind into this product.

8 To reduce the risk of electrical shock or burns, do not disassemble this product. Opening or removing covers may expose you to dangerous voltages, dangerous electrical current, or other risks. Incorrect reassemble can cause electrical shock when the appliance is subsequently used. If the product need repair, consult your dealer.

9 This product does not support connections to outside plant.

10 Refer servicing to qualified service personnel under the following conditions:

If liquid has been spilled into the product

If the product has been exposed to rain or water

If the product does not operate normally when following the operating instructions in the manual. Adjust only those controls that are covered by the operation instructions. Improper adjustment of other controls may result in damage and will often require extensive work by qualified service personnel to restore the product to normal operation.

If the product has been dropped or cabinet has been damaged

If the product exhibits a distinct change in performance

Warning

1. Avoid using telephone during an electrical storm. There may be a risk of electrical shock from lightning
2. Do not use the telephone to report a gas leak in the vicinity of the leak
3. Do not place the unit near microwave ovens, radio equipment, or non-ground connected televisions. These appliances may cause electrical interference to the base or handset
4. Installation must be performed in accordance with all relevant national wiring rules
5. Plug acts as Disconnect Device - The socket outlet to which this apparatus is connected must be installed near the equipment and must always be readily accessible
6. The system will not operate in the event of a blackout. Please keep a backup phone for emergencies

Intrinsic safety

Do not install the unit in conditions where there is a danger of electrically ignited explosions.

Exposure to sunlight, heat and moisture

Do not expose the unit to direct sunlight for long periods. Keep away from excessive heat and moisture.

Spare parts and accessories

Use only approved spare parts and accessories. The operation of non-approved parts cannot be guaranteed and may even cause damage.

RF compliance information

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTICES

FCC Note: This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IC Note: Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. The term "IC:" before the certification /registration number only signifies that the Industry Canada technical specifications were met.

Privacy of communications may not be ensured when using this telephone.

Information to user: The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

LIMITED WARRANTY

This limited, non-transferable warranty is provided to the original purchaser. The product is warranted to be free from defects in materials and workmanship under normal installation, use and service for a period of one (1) year from the date of purchase as shown on the purchaser's receipt.

Our obligation under this warranty is limited to repair or replacement (at our option) of the product or any part(s) which are defective provided that the product is returned to the original place of purchase or an authorized service location during the warranty period. Products returned must be accompanied by a copy of the purchase receipt. In the absence of a purchase receipt, the warranty period shall be one (1) year from the date of manufacture. Repair or replacement of the product is your sole and exclusive remedy.

If the product is repaired, reconditioned component parts or materials may be used. If the product is replaced, we may replace it with a new or reconditioned product of the same or similar design. The repaired product will be warranted for either (a) 90 days or (b) the remainder of the original one (1) year warranty period, whichever is longer.

This warranty does not apply to the defects outside of our control, including but not limited to acts of God, fire, flood and damage while in transit to service facility. We do not warranty that the product will be compatible with any telephone equipment, systems or party lines.

This warranty shall be void if the product is damaged as a result of defacement, misuse, abuse, neglect, accident, destruction or alteration of the serial number, improper electrical voltages or currents, repair, alteration or maintenance by any person or party other than our authorized service facility, or any violation of instructions furnished by us.

This warranty is also void if this product is removed from the country in which it was purchased by the original purchaser, if it is used in a country in which it is not registered for use, or if it is used in a country for which it was not designed. Due to variations in telephone systems and communications laws, this product may be illegal for use in some countries. We assume no responsibilities for damages or penalties incurred resulting from the use of this product in a manner or location other than that for which it was intended.

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Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you. This warranty is the sole and exclusive warranty provided for the product. There are no other express warranties. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

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Open Source Software Notice

This section provides information about the Open Source Software.

Open Source Software Notice

This product includes certain open source or other software originated from third parties that are subject to the GNU General Public License (GPLv2), GNU Library/Lesser General Public License (LGPLv2) and different and/or additional copyright licenses, disclaimers and notices. Please refer to the exact terms of the GPLv2 and LGPLv2 regarding your rights under said license. You may obtain a complete corresponding machine-readable copy of the source code of such software under the GPLv2 or LGPLv2 at http://www.kirktelecom.com/Installer/suk235.asp. Alternatively, Polycom (Denmark) offers to provide such source code to you on CD-ROM for a charge covering the cost of performing such distribution, such as the cost of media, shipping and handling, upon written request toPolycom (Denmark) at:

Source Code Requests
Polycom (Denmark)
Langmarksvej 34
DK-8700 Horsens
Denmark

This offer is valid for a period of three (3) years from the date of the distribution of this product by Polycom (Denmark).

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